



**Town of Clayton
Town of Clayton Planning Board Agenda
Tuesday, December 20, 2022 @ 6:00 PM
Town Council Chambers**

<https://www.youtube.com/TownofClaytonNC>

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ADJUSTMENT OF THE AGENDA

4. APPROVAL OF MINUTES

- a. [Clayton Planning Board - 28 Nov 2022 - Minutes - Pdf](#)

5. PUBLIC COMMENT SESSION

- a. 2022-206-OA Special Use Permit Text Amendments
Presenter: Ben Howell, Planning Director
[2022-206-OA Special Use Permit Text Amendments - Planning + Zoning - Pdf](#)
- b. 2022-158-CZM Clayton Village Center Conditional Zoning District
Presenter: Ben Howell, Planning Director
[2022-158-CZM Clayton Village Center Conditional Zoning District - Planning + Zoning - Pdf](#)

6. NEW BUSINESS

7. INFORMAL DISCUSSION AND PUBLIC COMMENT

8. ADJOURN



**Town of Clayton
Clayton Planning Board Minutes
Monday, November 28, 2022 at 6:00 PM
Town Council Chambers**

Board Members Present:

Jodie Dupree
James Moore
Stephen Powers
James Lipscomb
Kevin Lee
Jeffery Spence
Ron Williams
Lisa Begley

Board Members Absent:

Ethan Bennett

Staff Present:

Ben Howell, Planning Director
Love Ott, Land Development Specialist

1 CALL TO ORDER

Chair Moore called the meeting to order at 6:00pm.

2 PLEDGE OF ALLEGIANCE

3 ADJUSTMENT OF THE AGENDA

4 APPROVAL OF MINUTES

Motion: Board Member Powers

Second: Board Member Williams

Result: Approved, Unanimous

5 PUBLIC COMMENT SESSION

- a) 2022-166-RZ Clayton Dental
Presenter: Bruce Venable

Planning Director Ben Howell presented for Planner I Trainee Bruce Venable.

Proposed rezone from Planned Development-Mixed Use (PD-MU) to Highway Business (B-3)

It is located on 2165 Pritchard Road, on 2.14 acres and the existing use is vacant.

Future Land Use Map shows underlying low density residential but with the neighborhood mixed-use overlay that would allow commercial uses.

Staff believes that it is consistent and compatible with the 2045 Growth Plan.

Staff recommends approval.

- Applicant Comments

Dylan Tara with Tar Group attended to answer any questions the Board had.

Motion: Board Member Lipscomb, with the rezoning being consistent with the Future Land Use Map. Also finds it reasonable and in the public interest.

Second: Board Member Dupree

Result: Approved, Unanimous

- b) 2022-109-CZM The Townes at Little Creek Conditional Zoning District
Presenter: Ben Howell, Planning Director

Rezoning of properties from R-10 and B-3 SUD Zoning Districts to Conditional Zoning-Residential District

Located off Financial Drive and Town Centre on 53.83 acres.

Proposed up to 169 townhome units with a density of 3.14 units per acre.

Most of the development would be either side of the Wal-Mart with the remainder of property left as open space.

Access streets include Town Centre Blvd. and Financial Drive. Water and sewer provider would be Town of Clayton. The electric provider would be Duke Energy.

The proposed development is surrounded by B-3 zoning with some residential zoning to the rear across Little Creek.

Propose 58 units on West side and 111 units on the East side with a mixture of front-loaded and rear-loaded townhomes.

138 front-loaded and 31 rear-loaded.

Applicant proposed to do several transportation improvements which includes an eastbound approach with one egress lane and one ingress lane on Town Centre Blvd and proposed street A.

Constructing a site access along the north bound approach on Financial Drive and Scholar Drive.

Transportation Impact Analysis (TIA) included a recommendation for Traffic Signal Warrant Analysis for intersection of Financial Drive and US 70.

Applicant agreed to construct the Traffic Signal Warrant Analysis after 84 certificates of Occupancy (50%) are issued and up to 15% of the cost of a signal if warranted.

Public sewer would connect to pump station behind Wal-Mart.

Proposed a 15-foot-wide Type C Landscaping Buffer and street tree planting on Financial Drive.

The 2045 Growth Plan calls for high density residential with community center overlay within the area which would allow 10-12 units per acre.

The proposed development would be a mix of single-family detached homes, townhomes and multifamily units.

It is consistent with the 2045 Growth Plan.

Applicant proposed to connect to public water and extend public sewer to serve development.

The development would improve balance of uses and meets specific demand in the town that would provide transition from commercial uses along US 70 back to residential uses.

the development proposed to be served by West Clayton Elementary, Clayton Middle and Clayton High. West Clayton Elementary and Clayton High are on 2022-2023 are on the capped school list for Johnston County.

2.09 acres of the recreation/open space area including 1.71 acres as a greenway easement along Little Creek.

There would be no adverse effect on adjoining property owners.

Staff believes that the applicant has met the criteria for master plan approval.

Staff recommends approval subject to the 16 recommended conditions of approval.

Chair Moore asked if Town Centre Blvd. and Financial Drive are private roads?

Planning Director Howell believes Financial Drive and Town Centre Blvd. are private.

Board Member Powers asked if there was any provisions to ensure the driveways would be long enough to accommodate longer cars or pickup trucks?

Planning Director Howell stated that the applicant proposed to have an average of 23 feet between the sidewalk and the face of the garage to try to account for larger vehicles.

Board Member Begley asked for clarification on what a Type C Buffer is?

Planning Director Howell stated it is the buffer that is required for all conditional zoning districts with three different options of width. The code does require conditional zoning districts have a minimum 15 foot Type C buffer.

Board Member Begley asked if the type of opaque screen is up to the builder?

Planning Director Howell stated it has not been decided on what type of screening would be used because there is an opportunity for the Planning Director to approve waivers if there is existing vegetation.

Board Member Begley asked how big of an area is staff referring to?

Planning Director Howell stated the staff looks within the immediate area.

Board Member Lipscomb asked if there is a standard that is in direct conflict, how does that get rationalized? Because the applicant wants certainty due to the possibility of a dramatic impact of the subdivision approval or a conditional zoning that could change the results.

Planning Director Howell stated that is why staff reviews these proposals extensively before getting to the board. This particular development has gone through three or four reviews for Town Code and State Regulations.

Chair Moore asked if the board could add a condition in addition to the one-car garage for two vehicle spaces?

Planning Director Howell stated that is something the board can ask the applicant. The applicant is proposing additional space of on-street parking spaces as well as at least two areas of small off-street parking spaces for guest. The applicant would have to agree to the board's proposal of adding two vehicle spaces.

Board Member Lipscomb stated that the county records has the right-of-way as public however that does not mean the roads have been taken over by the Town. Has that been studied?

Planning Director Howell stated that is something that Engineering looks at, that issue has been addressed. Financial Drive is a Town road.

Board Member Lipscomb is concerned that the plat map could say public but it does not mean it has been accepted for perpetual maintenance by the Town.

Planning Director Howell stated that where the road is substandard whether it has been taken over by the Town or not, the development is required to improve the road

up to the Town's current standards. Then go through the process of ensuring the Town takes the road over with this development it is proposed to be public Town maintained streets.

Board Member Begley asked for clarification on what capped school means?

Planning Director Howell was not sure how Johnston County determines whether a school is capped or not, but believes it is based on enrollment. The schools are on this year's capped school list and the development would not be ready for at least two years so it could change.

- Applicant Comments

Marty Bizzell with Bass/Nixon/Kennedy Consulting Engineering in Raleigh at 6310 Chapel Hill Road representing DRB Homes.

The pump station at Wal-Mart is close to capacity and the town is hiring a consultant to do a capital improvement project to take the pump station offline and do a gravity extension East. Applicant is willing to pay a share of the cost of the gravity extension and pump station abandonment.

Proposed 67 additional parking spaces, 36 on the West and 31 on the East.

Many setbacks from the sidewalk to the garage goes up to about 40 feet.

The units backing up to the Wal-Mart side would be rear-loaded with a private access by a private drive.

There is a control pond that is already serving Johnston Charter Academy and will be analyzed to be possibly upsize to accommodate the stormwater runoff.

The amenities are split with a dog park and playground equipment.

The road is wider on one side to accommodate parking and public street section that shows no parking.

With Johnston Charter Academy immediately East there are pedestrian connections with crosswalks and the applicant intends to connect to them.

Caroline Cheves, Professional Engineer with Raymond Kemp Associates at 5808 Farrington Place in Raleigh conducted a TIA.

The TIA captured peak hours of each intersection especially the intersection for Johnston Charter Academy which were 2-6pm.

The estimated build out year would be 2028 at a two percent traffic grow up which it is compounding every year at a two percent growth. Adjacent proposed developments would be added every year which there is one to the West.

A projection would be generated by the proposed site and apply it to the roadway network and follow NCDOT and Town guidelines to determine what level of service and delay would be.

The residential development is not expected to have overlapping afternoon peak traffic with school traffic based on the TIA.

Adding the residential creates mixed-use which would create fewer vehicle miles traveled for residents based on the TIA.

Monitor the signalization for Financial Drive and US 70 is the applicant's proposal based on the results from the TIA.

The expected increase in traffic at the intersection is by 2.5 percent during the peak hours.

Chair Moore asked if the applicant has received permission to use the driveways to get to Town Centre Blvd.?

Ms. Cheves stated those are existing accesses off US 70 and Town Centre Blvd. is a public right-of-way which the applicant is connecting to.

Board Member Dupree asked how much are the units to the West going to impact what is not a public drive but access to the shopping center?

Mr. Bizzell stated Town Centre is recorded as public right-of-way as well as Financial Drive. The concern is Town Centre on the West turns out to US 70 as public right-of-way. The West side would be a connection or extension of Town Centre. If you are coming out you would go East on Town Centre Blvd. or go left and stay on a public road out to US 70. In either direction vehicles would be staying on a public right-of-way.

Chair Moore asked when saying public is adopted by the Town or the landowner has provided public access.

Mr. Bizzell stated the landowner would dedicate the land as a public right-of-way, and will ensure that the road is on the Town's maintenance plan.

Chair Moore asked if the developer for this property would own the roads?

Mr. Bizzell stated the applicant would construct the roads proposed and dedicate a public right-of-way.

Board Member Begley asked if residents would have to drive through town Centre parking lot to get to their homes, or would there be a dedicated road?

Mr. Bizzell stated there would be a dedicated road.

Board Member Powers stated those units on the West would have to turn left to get onto US 70, however the only option is turning right.

Ms. Cheves stated the residents could either turn right at the West driveway or Financial Drive or make a U-turn along US 70.

Board Member Powers stated he does not believe anyone would be in favor of having to make a U-turn.

Ms. Cheves stated that studies show U-turns are safer and faster than full movement signals.

Board Member Dupree asked if the applicant is confident that the two driveways by Lone Star and one that comes out in front of the car wash are public?

Mr. Bizzell stated that the boundary surveys used are up to date that shows public right-of-ways, so they are confident.

Board Member Lipscomb stated a greenway connecting the development would be valuable in the future and encourage the Council in lieu of having open space fees paid to the Town have the developer install a neighborhood greenway.

Board Member Williams stated concerns of the one left turn to come out of the shopping center and consider traffic lights.

Board Member Begley stated also concerns with the one left turn.

Cindy Schwarzkopf with DRB Homes at 3000 RDU Center Blvd. in Mooresville.

The applicant would love to use the \$338,000 in open space fees to construct a greenway.

Ms. Cheves stated in order to get an additional left turn onto US 70 it would be very difficult because it is a NCDOT road.

Board Member Powers asked who would be responsible for extending the turn lane for the U-turn?

Ms. Cheves stated any of the que links for a specific lane are exceeding the current storage links, DOT would ask to extend, however the TIA showed the existing infrastructure are sufficient. NCDOT agreed to the findings of the study.

Motion: Board Member Lipscomb, with the Town confirming the right-of-ways is existing or adopted by the Town prior to the development and ask the Town Council to consider waiving the open space fee in order to install a greenway.

Second: Board Member Williams

Result: Approved, Unanimous

6 NEW BUSINESS

- a) Adoption of the 2023 Planning Board Meeting Calendar
Presenter: Planning Director, Ben Howell

Motion: Begley
Second: Lee
Result: Approved, Unanimous

7 PLANNING DIRECTOR REPORT

December meeting will be moved up a week on December 20th.

Event for Advisory Boards on December 6th.

December 14th Downtown Master Plan update public meeting from 6-8pm in the Town Chambers.

December 15th staff will be at the Community Center for the Gateway 42 public meeting from 6-8pm.

New Planning Board member will be appointed by Town Council next week.

Board Member Lipscomb suggested that the board gets monthly updates of what the staff is reviewing and receiving.

Planning Director Howell stated that there is a map on the website that shows what is being reviewed, approved and under construction that is updated at least once a month.

Chair Moore asked what the MPO's suggestions are for the left turns?

Planning Director Howell stated there was a DOT project to improve the US 70/Shotwell intersection and the Town has submitted an application to the MPO to get federal funds to supplement the DOT funds to get the project constructed. The Town would find out the results of the application in January. Those funds would be available after October of next year to begin getting the project under construction.

8 INFORMAL DISCUSSION AND PUBLIC COMMENT

9 ADJOURN

Motion: Board Member Dupree
Second: Board Member Powers
Result: Approved, Unanimous

Chair Moore adjourned the meeting at 7:35pm.



Clayton Planning Board Agenda Cover Sheet

Meeting Date

December 20, 2022

Agenda Location

PUBLIC HEARINGS

Item Title

2022-206-OA Special Use Permit Text Amendments

Presenter(s)

Ben Howell, Planning Director

Suggested Action

Other - Recommend Approval to Town Council

Strategic Priorities Alignment



☐
Think Clayton
(Administrative)



☐
Think Arts &
Culture



☐
Think
Downtown



☐
Think
Economic
Development



☒
Think Land
Use &
Housing



☐
Think
Mobility



☐
Think Parks,
Recreation
& Natural
Resources



☐
Think Public
Services &
Infrastructure

Public Hearing: Yes - Legislative

If Approved, Will Document Require Recordation? No

Does This Item Require a Communication Plan?

- ☒ Public Hearing (Required by GS)
- ☒ Newspaper Notice (Required by GS)
- ☐ Public Forum/Input Session
- ☐ E-News Distribution
- ☐ Social Media
- ☐ Special Mailing

- ☐ Public Hearing (Not Required by GS)
- ☐ Newspaper Notice (Not Required by GS)
- ☐ Press Release
- ☐ Website
- ☐ Survey
- ☐ None Required

Summary

Request to amend the Unified Development Code, Sections 155.202, 155.203(L), 155.402(E)(2)(d), and 155.705. The purpose of this text amendment is to remove the requirement for a Special Use Permit for apartments, duplexes and townhomes, instead requiring these uses to apply for a Conditional Zoning District. The amendment also clarifies the perimeter buffer requirement for Conditional Zoning Districts, removes the minimum size requirements for Conditional Zoning Districts, clarifies the requirement of a Master Plan Narrative, and allows certain Conditional Zoning District requests to be accompanied by a Site Plan instead of a Master Plan and Narrative. This amendment will allow development projects proposing apartments, duplexes or townhomes to follow the legislative Conditional Zoning District process instead of the quasi-judicial Special Use Permit process.

Recommendation

Staff recommends the Planning Board hear public comment on the proposed text amendment and recommend approval of the proposed text amendment to the Town Council.

Funding Source

N/A

Cost

N/A

Corresponding Documentation

- [0 2022-206-OA SUP Text Amendment Staff Report](#)
- [1 2022-206-OA SUP Text Amendment 155.202-203\(L\) Current Language](#)
- [2 2022-206-OA SUP Text Amendment 155.202-203\(L\) Redlined Changes](#)
- [3 2022-206-OA SUP Text Amendment 155.202-203\(L\) New Language](#)
- [4 2022-206-OA SUP Text Amendment 155.402\(E\)\(2\)\(d\) Current Language](#)
- [5 2022-206-OA SUP Text Amendment 155.402\(E\)\(2\)\(d\) Redlined Changes](#)
- [6 2022-206-OA SUP Text Amendment 155-402\(E\)\(2\)\(d\) New Language](#)
- [7 2022-206-OA SUP Text Amendment 155.705 Current Language](#)
- [8 2022-206-OA SUP Text Amendment 155.705 Redlined Changes](#)
- [9 2022-206-OA SUP Text Amendment 155.705 New Language](#)

Meeting Timeline

Planning Board Public Comment Session - December 20, 2022

Submitted By: Ben Howell, Planning + Zoning

Reviewed By:

Ben Howell, Planning Director
Love Ott, Land Development
Specialist

Approved - Dec 13 2022

Approved - Dec 14 2022



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Planning Board
December 20, 2022

STAFF REPORT

Application Number: 2022-206-OA

Project Name: Special Use Permit Ordinance Amendment

Applicant: Town of Clayton
Public Noticing: Newspaper ad to be published January 4 & January 11, 2023 (pending Planning Board action)

REQUEST: Request to modify sections of Articles 2, 4 and 7 of the Unified Development Code. This text amendment removes the requirement for a Special Use Permit for apartments, townhomes and duplexes, instead requiring these uses to rezone to a Conditional Zoning District. The amendment also clarifies the perimeter buffer requirement for Conditional Zoning Districts and the process and application requirements for Conditional Zoning Districts.

SECTIONS PROPOSED FOR AMENDMENT:

The following sections of Title XV, Chapter 155 and their general description are proposed for amendment:

§155.202 – Land Use Regulations
§155.203(L) – Conditional Zoning District Standards
§155.402(E)(2)(d) – Project Boundary Buffers
§155.705 – Conditional Zoning District (Administration/Procedures)

STAFF ANALYSIS AND COMMENTARY:

Overview

These amendments will allow for certain residential uses to be approved through the legislative Conditional Zoning District process instead of the quasi-judicial Special Use Permit process, as well as clarify several processes and requirements for Conditional Zoning Districts. This amendment was initiated at the request of Town Council and Town Administration.

Approval Criteria:

1. The extent to which the proposed text amendment is consistent with the remainder of the chapter, including, specifically, any purpose and intent statements, and must adopt a statement describing whether the action is consistent or inconsistent with approved plans;

Page 1 of 2

Response: The proposed text amendment is consistent with the remainder of the applicable chapters in the UDC. It meets the intent of the code and is consistent with all approved plans. The primary purpose of the text amendment is to change the process by which certain residential uses are approved.

2. The extent to which the proposed text amendment represents a new idea not considered in the existing chapter, or represents a revision necessitated by changing circumstances over time;

Response: The proposed text amendment is a result of changing circumstances – the Town is seeing more townhome and apartment development, and allowing these types of developments to be approved legislatively through the Conditional Zoning process will allow for more open public debate and a simplified process for applicants, the public and Town staff.

3. Whether or not the proposed text amendment corrects an error in the chapter;

Response: The proposed text amendment does not correct an error in chapters 202, 203 or 705; it does correct an error in chapter 402 by replacing “planned development” with “conditional zoning district,” as the Town no longer has planned developments.

4. Whether or not the proposed text amendment revises the chapter to comply with state or federal statutes or case law;

Response: The purpose of the proposed text amendment is not to comply with state or federal statutes or case law.

CONSIDERATIONS

- The Planning Board shall make a recommendation to Town Council. The Town Council shall make a final decision regarding revisions to the Town Code.

STAFF RECOMMENDATION:

Staff is recommending approval of the proposed changes to the UDC.

ATTACHMENTS:

- 1) §155.202, 203(L) Current Language
- 2) §155.202, 203(L) Redlined Changes
- 3) §155.202, 203(L) Proposed Language
- 4) §155.402(E)(2)(d) Current Language
- 5) §155.402(E)(2)(d) Redlined Changes
- 6) §155.402(E)(2)(d) Proposed Language
- 7) §155.705 Current Language
- 8) §155.705 Redlined Changes
- 9) §155.705 Proposed Language

§ 155.202 LAND USE REGULATIONS**(A) USE REGULATIONS TABLE**

The use regulations table is subject to the explanation as set forth below.

(1) Key to Types of Use

- (a) **Permitted.** A "P" indicates that a use is permitted in the respective district subject to the specific use standards in §§ 155.300 through 155.311. Such uses are also subject to all other applicable requirements of this chapter.
- (b) **Special Use Review.** An "S" indicates a use that may be permitted in the respective general use district only where approved by the Town Council upon presentation of competent, material, and substantial evidence establishing compliance with one or more general standards requiring that judgment and discretion be exercised as well as compliance with specific standards, and in accordance with § 155.711. Special uses are subject to all other applicable requirements of this chapter, including the specific use standards contained in §§ 155.300 through 155.311, except where such use standards are expressly modified by the Town Council as part of the special use approval.
- (c) **Specific Use Section.** The "Specific Use Section" column on the table is a cross-reference to any specific use standard listed in §§ 155.300 through 155.311. Where no cross-reference is shown, no additional use standard shall apply.
- (d) **Uses Not Permitted.** A blank cell in the use table indicates that a use is not permitted in the respective district. Except as pursuant to §155.110 and §155.300, the following uses are entirely prohibited within the jurisdiction of the Town, although such enumeration shall not necessarily be deemed exclusive or all-inclusive:
 - 1. Open dump;
 - 2. Outdoor gun range; and
 - 3. Any use prohibited by an applicable overlay zoning district.

(2) Uses

Table 2-1 "Use Regulations" lists the principal uses regulated by this chapter for conventional districts. For conditional zoning districts see § 155.200(C), for overlay districts see § 155.200(D), and for accessory structures and uses see § 155.308. In all cases, additional clarification and/or restrictions may be found in the Specific Use Standards (Article 3 of this chapter).

§ 155.202 - Table 2-1 Use Regulations

Use Type	Zoning Districts												Specific Use Section
	Residential				Nonresidential								
	R-E	R-10	R-8	R-6	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF	
Residential Uses													

Use Type	Zoning Districts												Specific Use Section
	Residential				Nonresidential								
	R-E	R-10	R-8	R-6	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF	
Group Care Home (2-6 residents)	P	P	P	P									\$155.301(A)
Group Care Home (7-12 Residents)	S	S	S	S	S	S		S					\$155.301(A)
Group Care Home (13+ Residents)						S		S					\$155.301(A)
Apartments		S	S	S	S	S	S	S	S				\$155.301(B)
Boarding House				S		S		S					\$155.301(C)
Duplex		S	S	S	S								\$155.301(G)
Manufactured Home	P												\$155.301(D)
Manufactured Home Park	S												\$155.301(E)
Nursing Home (Congregate Living Facility)	P					P		P	P				\$155.301(F)
Townhouse		S	S	S	S	S		S	S				\$155.301(H)
Security/Caretaker Quarters	P								S			S	\$155.301(I)
Single Family House	P	P	P	P	P								\$155.301(J)
Upper-story Residence					P	P	P	P	P				\$155.301(K)
Zero Lot Line House		P	P	P									\$155.301(L)
Public and Civic Uses													
Assembly	S					P	S	S	P			P	\$155.302(A)
Cemetery	P								S			P	\$155.302(B)
Church or Place of Worship	S	S	S	S		P		P	S				\$155.302(C)
College or University						P						P	\$155.302(D)
Day Care Facility	S	S	S	S	S	P		P	P				\$155.302(E)
Government Service	S	S	S	S	P	P	P	P	P	P	P	P	\$155.302(F)
Hospital or Medical Center						P			P			P	\$155.302(G)
School (Elementary or Secondary)	S	S	S	S		P						P	\$155.302(H)
School (Technical, Trade or Business)	S	S	S	S		P			P	P	P	P	\$155.302(I)
Recreational Uses													
Entertainment, Indoor						P	S	P	P	P		P	\$155.303(A)
Entertainment, Outdoor									S	P		P	\$155.303(B)
Fitness/Recreation Center						P	S	P	P	P		P	\$155.303(C)
Golf Course	P	P	P	P								P	\$155.303(D)
Gun Range							S		S	S	S	S	\$155.303(E)
Park	P	P	P	P	P	P	S	P				P	\$155.303(F)
Stable, Private	P												\$155.303(G)
Agricultural Uses													
Agriculture, Livestock	S												\$155.304(A)
Agriculture, Sales and Service	P										S		\$155.304(B)
Nursery	P					P	S	P	P			P	\$155.304(C)
Commercial Uses													
Adult Oriented Business										S			\$155.305(A)
Bed and Breakfast	P			S	S		S						\$155.305(B)
Car Wash/Auto Detailing								P	P				\$155.305(C)
Contractor Office						P			P	P	P		\$155.305(D)
Convenience Store with Gas Sales								P	P	P			\$155.305(E)
Creative Studio					P	P	P	P	P				\$155.305(F)
Financial Institution						P	S	P	P				\$155.305(G)
Funeral Home	S				P	P							\$155.305(H)
Hotel/Motel						P	S	P	P				\$155.305(I)
Kennel	S							P	P				\$155.305(J)
Laundry Services								P	P	P	P		\$155.305(K)
Lounge, Cocktail							S	S	S	S			\$155.305(L)
Microbrewery							P	S	P	P	P		\$155.305(M)
Publisher						P			P	P	P		\$155.305(N)
Office, General					P	P	P	P	P	P		P	\$155.305(O)
Office, Medical					P	P	P	P	P				\$155.305(P)
Outdoor Seating/Sidewalk Cafe						P	P	P	P				\$155.305(Q)
Parking Lot						S	S	S	S	S	S	S	\$155.305(R)
Pawn Shop									P	P			\$155.305(S)
Radio or Television Studio									P	P	P		\$155.305(T)
Restaurant						P	P	P	P				\$155.305(U)
Retail Sales							P	P	P	P			\$155.305(V)

Use Type	Zoning Districts													Specific Use Section
	Residential				Nonresidential									
	R-E	R-10	R-8	R-6	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF		
Self-storage Facility									S	P			\$155.305(W)	
Service					P	P	P	P	P				\$155.305(X)	
Tattoo Parlor									P				\$155.305(Y)	
Towing Service and Storage									S	S	P		\$155.305(Z)	
Vehicle Repair or Service									S	P	P		\$155.305(AA)	
Vehicle Sales and Rental									S	P	P		\$155.305(BB)	
Veterinary Clinic						P		P	P				\$155.305(CC)	
Industrial Uses														
Building Supplies, Wholesale										P	P		\$155.306(A)	
Crematorium										P	P		\$155.306(B)	
Gas and Fuel, Wholesale										P	P	P	\$155.306(C)	
Laboratory, Research						P				P	P		\$155.306(D)	
Manufacturing, Light										P	P		\$155.306(E)	
Manufacturing, Heavy											P		\$155.306(F)	
Research and Development						P				P	P		\$155.306(G)	
Warehouse, Freight Movement									S	P	P		\$155.306(H)	
Utilities														
Recycling Center										S	P	P	\$155.307(A)	
Renewable Energy Facility	S									S	S	S	\$155.307(B)	
Telecommunication Facility	S	S	S	S	S	S	S	S	S	S	S	S	\$155.307(C)	
Utility, Minor	P	P	P	P	P	P	P	P	P	P	P	P	\$155.307(D)	
Utility, Major										P	P	P	\$155.307(E)	
Waste Service										S	P	P	\$155.307(F)	
Accessory Uses														
Accessory Dwelling Unit	S	S	S	S									155.308(C)(1)	
Food Truck						P	P	P	P	P	P	P	155.308(D)(2)	
Day Care Facility	S	S	S	S		P		P	P	P	P	P	155.308(D)(3)	
In-Home Daycare	P	P	P	P	P								155.308(C)(3)	
Park									P			P	155.308(D)(4)	
Outdoor Display/Sales							P	P	P				155.308(D)(5)	
Outdoor Dining						P	P	P	P				155.308(D)(6)	
Outdoor Storage, Limited									S	P	P	P	155.308(D)(7)	
Outdoor Storage, General										P	P	P	155.308(D)(8)	
	Key:													
	P – Permitted													
	S – Special Use Permit required in the zoning district only if approved by the Town Council (TC) (§ 155.711)													

(Ord. 2005-11-02, adopted 11/21/2005; Am. Ord. 2006-06-01, adopted 06/19/2006; Am. Ord. 2007-04-05, adopted 04/02/2007; Am. Ord. 2007-05-02, adopted 05/07/2007; Am. Ord. 2009-06-06, adopted 06/01/2009; Am. Ord. 2009-08-03, adopted 08/03/2009; Am. Ord. 2012-01-04, adopted 01/03/2012; Am. Ord. 2012-04-02, adopted 04/02/2012; Am. Ord. 2012-12-02, adopted 12/03/2012; Am. Ord. 2014-12-02, adopted 12/01/2014; Ord. 2015-09-03, adopted 09/28/2015; Am. Ord 2016-04-04, passed 04-04-2016; Ord. 2017-04-06, approved 04/03/2017)

the B-1 District, no townhouse or apartment shall be established on a parcel less than 20,000 square feet in area.

- (b) Upper-story residential is permitted on the upper floors of a nonresidential building and shall conform to the lot, yard and bulk requirements of the principal building.
- (c) Except in the B-1 District, townhouse and apartment parcels and upper-story residential units shall not exceed a density of 12 units per acre in a standard residential district.

PART 3. CONDITIONAL ZONING DISTRICTS

(L) CONDITIONAL ZONING DISTRICT STANDARDS

(1) General Provisions for all Conditional Zoning Districts

(a) *Rezoning Criteria*

In approving a rezoning for a conditional district, the Town Council shall find the district designation and master plan comply with the general standards of this section and the specific criteria of (§ 155.705).

(b) *Master Plan*

The development proposed in the master plan is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties. The master plan shall be prepared by a professionally certified landscape architect, engineer or architect.

(c) *Design Guidelines and Dimensional Standards*

Each master plan shall provide a comprehensive set of design guidelines that demonstrate the project will be appropriate within the context of the surrounding properties and the larger community. All bulk, area, and dimensional standards shall be established by the Town Council at the time of approval.

(d) *General Development Standards*

Unless granted Variance by the Board of Adjustment, all standards specified in §§ 155.400 through 155.405 shall apply.

(e) *Resource Conservation Areas*

See Article 5 for restrictions on the use of resource conservation areas.

(f) *Recreation and Open Space*

The master plan shall meet or exceed the recreation and open space requirements of an open space residential subdivision (see § 155.203(H)).

(g) ***Stormwater Management***

The master plan shall contain a comprehensive stormwater management plan prepared by a professional engineer licensed in the state.

(h) ***Phasing***

If development is proposed to occur in phases, the master plan shall include a phasing plan for the development, and if appropriate, with specific build-out dates. Guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents and tenants of the project, or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.

(i) ***Landscaping, Buffering, and Screening***

As otherwise required by Article 4, with a minimum requirement of a 15 ft wide buffer meeting Class “C” perimeter buffer planting requirements.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2012-04-02, passed 4-2-12; Am. Ord. 2012-12-02, passed 12-3-12; Am. Ord. 2014-06-10, passed 6-16-14; Am. Ord. 2017-08-05, adopted 8/7/2017)

§ 155.202 LAND USE REGULATIONS**(A) USE REGULATIONS TABLE**

The use regulations table is subject to the explanation as set forth below.

(1) Key to Types of Use

- (a) **Permitted.** A "P" indicates that a use is permitted in the respective district subject to the specific use standards in §§ 155.300 through 155.311. Such uses are also subject to all other applicable requirements of this chapter.
- (b) **Special Use Review.** An "S" indicates a use that may be permitted in the respective general use district only where approved by the Town Council upon presentation of competent, material, and substantial evidence establishing compliance with one or more general standards requiring that judgment and discretion be exercised as well as compliance with specific standards, and in accordance with § 155.711. Special uses are subject to all other applicable requirements of this chapter, including the specific use standards contained in §§ 155.300 through 155.311, except where such use standards are expressly modified by the Town Council as part of the special use approval.
- (c) **Conditional Zoning District Required.** A "C" in a cell of the principal use table indicates that a specific use type is permitted as part of the approval of a Conditional Zoning District, provided the Conditional Zoning District request is accompanied by either a Site Plan or Master Plan and Narrative in accordance with Section 155.203(L) of this Article.
- ~~(e)~~(d) **Specific Use Section.** The "Specific Use Section" column on the table is a cross-reference to any specific use standard listed in §§ 155.300 through 155.311. Where no cross-reference is shown, no additional use standard shall apply.
- ~~(e)~~(e) **Uses Not Permitted.** A blank cell in the use table indicates that a use is not permitted in the respective district. Except as pursuant to §155.110 and §155.300, the following uses are entirely prohibited within the jurisdiction of the Town, although such enumeration shall not necessarily be deemed exclusive or all-inclusive:
 1. Open dump;
 2. Outdoor gun range; and
 3. Any use prohibited by an applicable overlay zoning district.

(2) Uses

Table 2-1 "Use Regulations" lists the principal uses regulated by this chapter for conventional districts. For conditional zoning districts see § 155.200(C), for overlay districts see § 155.200(D), and for accessory structures and uses see § 155.308. In all cases, additional clarification and/or restrictions may be found in the Specific Use Standards (Article 3 of this chapter).

§ 155.202 - Table 2-1 Use Regulations

Use Type			Zoning Districts													Specific Use Section
		Residential					Nonresidential									
		R-E	R-10	R-8	R-6	C	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF		
	Residential Uses															
Group Care Home (2-6 residents)	P	P	P	P											\$155.301(A)	
Group Care Home (7-12 Residents)	S	S	S	S		S	S		S						\$155.301(A)	
Group Care Home (13+ Residents)							S		S						\$155.301(A)	
Apartments		S	S	S	C	S	S	S	S	S					\$155.301(B)	
Boarding House				S			S		S						\$155.301(C)	
Duplex		S	S	S	C	S									\$155.301(G)	
Manufactured Home	P														\$155.301(D)	
Manufactured Home Park	S														\$155.301(E)	
Nursing Home (Congregate Living Facility)	P						P		P	P					\$155.301(F)	
Townhouse		S	S	S	C	S	S		S	S					\$155.301(H)	
Security/Caretaker Quarters	P									S			S		\$155.301(I)	
Single Family House	P	P	P	P		P									\$155.301(J)	
Upper-story Residence						P	P	P	P	P					\$155.301(K)	
Zero Lot Line House		P	P	P											\$155.301(L)	
	Public and Civic Uses															
Assembly	S						P	S	S	P			P		\$155.302(A)	
Cemetery	P									S			P		\$155.302(B)	
Church or Place of Worship	S	S	S	S			P		P	S					\$155.302(C)	
College or University							P						P		\$155.302(D)	
Day Care Facility	S	S	S	S		S	P		P	P					\$155.302(E)	
Government Service	S	S	S	S		P	P	P	P	P	P	P	P		\$155.302(F)	
Hospital or Medical Center							P			P			P		\$155.302(G)	
School (Elementary or Secondary)	S	S	S	S			P						P		\$155.302(H)	
School (Technical, Trade or Business)	S	S	S	S			P			P	P	P	P		\$155.302(I)	
	Recreational Uses															
Entertainment, Indoor							P	S	P	P	P		P		\$155.303(A)	
Entertainment, Outdoor										S	P		P		\$155.303(B)	
Fitness/Recreation Center							P	S	P	P	P		P		\$155.303(C)	
Golf Course	P	P	P	P									P		\$155.303(D)	
Gun Range								S		S	S	S	S		\$155.303(E)	
Park	P	P	P	P		P	P	S	P				P		\$155.303(F)	
Stable, Private	P														\$155.303(G)	
	Agricultural Uses															
Agriculture, Livestock	S														\$155.304(A)	
Agriculture, Sales and Service	P											S			\$155.304(B)	
Nursery	P						P	S	P	P			P		\$155.304(C)	
	Commercial Uses															
Adult Oriented Business											S				\$155.305(A)	
Bed and Breakfast	P			S		S		S							\$155.305(B)	
Car Wash/Auto Detailing									P	P					\$155.305(C)	
Contractor Office							P			P	P	P			\$155.305(D)	
Convenience Store with Gas Sales									P	P	P				\$155.305(E)	
Creative Studio						P	P	P	P	P					\$155.305(F)	
Financial Institution							P	S	P	P					\$155.305(G)	
Funeral Home	S					P	P								\$155.305(H)	
Hotel/Motel							P	S	P	P					\$155.305(I)	
Kennel	S								P	P					\$155.305(J)	
Laundry Services									P	P	P	P			\$155.305(K)	
Lounge, Cocktail								S	S	S	S				\$155.305(L)	
Microbrewery								P	S	P	P	P			\$155.305(M)	
Publisher							P			P	P	P			\$155.305(N)	
Office, General						P	P	P	P	P	P		P		\$155.305(O)	
Office, Medical						P	P	P	P	P					\$155.305(P)	
Outdoor Seating/Sidewalk Cafe							P	P	P	P					\$155.305(Q)	

Article 2 / Zoning Districts
§155.202 Land Use Regulations

Use Type			Zoning Districts												Specific Use Section	
			Residential				Nonresidential									
			R-E	R-10	R-8	R-6	C	O-R	O-I	B-1	B-2	B-3	I-1	I-2		PF
Parking Lot									S	S	S	S	S	S	S	\$155.305(R)
Pawn Shop												P	P			\$155.305(S)
Radio or Television Studio												P	P	P		\$155.305(T)
Restaurant									P	P	P	P				\$155.305(U)
Retail Sales										P	P	P	P			\$155.305(V)
Self-storage Facility												S	P			\$155.305(W)
Service								P	P	P	P	P				\$155.305(X)
Tattoo Parlor												P				\$155.305(Y)
Towing Service and Storage												S	S	P		\$155.305(Z)
Vehicle Repair or Service												S	P	P		\$155.305(AA)
Vehicle Sales and Rental												S	P	P		\$155.305(BB)
Veterinary Clinic									P		P	P				\$155.305(CC)
Industrial Uses																
Building Supplies, Wholesale													P	P		\$155.306(A)
Crematorium													P	P		\$155.306(B)
Gas and Fuel, Wholesale													P	P	P	\$155.306(C)
Laboratory, Research									P				P	P		\$155.306(D)
Manufacturing, Light													P	P		\$155.306(E)
Manufacturing, Heavy														P		\$155.306(F)
Research and Development									P				P	P		\$155.306(G)
Warehouse, Freight Movement												S	P	P		\$155.306(H)
Utilities																
Recycling Center													S	P	P	\$155.307(A)
Renewable Energy Facility			S										S	S	S	\$155.307(B)
Telecommunication Facility			S	S	S	S		S	S	S	S	S	S	S	S	\$155.307(C)
Utility, Minor			P	P	P	P		P	P	P	P	P	P	P	P	\$155.307(D)
Utility, Major													P	P	P	\$155.307(E)
Waste Service													S	P	P	\$155.307(F)
Accessory Uses																
Accessory Dwelling Unit			S	S	S	S										155.308(C)(1)
Food Truck									P	P	P	P	P	P	P	155.308(D)(2)
Day Care Facility			S	S	S	S			P		P	P	P	P	P	155.308(D)(3)
In-Home Daycare			P	P	P	P		P								155.308(C)(3)
Park												P			P	155.308(D)(4)
Outdoor Display/Sales										P	P	P				155.308(D)(5)
Outdoor Dining									P	P	P	P				155.308(D)(6)
Outdoor Storage, Limited												S	P	P	P	155.308(D)(7)
Outdoor Storage, General													P	P	P	155.308(D)(8)
		Key:														
		P – Permitted														
		S – Special Use Permit required in the zoning district only if approved by the Town Council (TC) (§ 155.711)														
		C – Conditional Zoning District required for this use (§155.203(L) and §155.705)														

(Ord. 2005-11-02, adopted 11/21/2005; Am. Ord. 2006-06-01, adopted 06/19/2006; Am. Ord. 2007-04-05, adopted 04/02/2007; Am. Ord. 2007-05-02, adopted 05/07/2007; Am. Ord. 2009-06-06, adopted 06/01/2009; Am. Ord. 2009-08-03, adopted 08/03/2009; Am. Ord. 2012-01-04, adopted 01/03/2012; Am. Ord. 2012-04-02, adopted 04/02/2012; Am. Ord. 2012-12-02, adopted 12/03/2012; Am. Ord. 2014-12-02, adopted 12/01/2014; Ord. 2015-09-03, adopted 09/28/2015; Am. Ord 2016-04-04, passed 04-04-2016; Ord. 2017-04-06, approved 04/03/2017)

the B-1 District, no townhouse or apartment shall be established on a parcel less than 20,000 square feet in area.

- (b) Upper-story residential is permitted on the upper floors of a nonresidential building and shall conform to the lot, yard and bulk requirements of the principal building.
- (c) Except in the B-1 District, townhouse and apartment parcels and upper-story residential units shall not exceed a density of 12 units per acre in a standard residential district.

PART 3. CONDITIONAL ZONING DISTRICTS

(L) CONDITIONAL ZONING DISTRICT STANDARDS

(1) **General Provisions for all Conditional Zoning Districts**

(a) ***Rezoning Criteria***

In approving a rezoning for a conditional district, the Town Council shall find the district designation and site plan or master plan and narrative comply with the general standards of this section and the specific criteria of (§ 155.705).

(b) ***Site Plan or Master Plan and Narrative***

The development proposed in the site plan or master plan and narrative is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties. The site plan or master plan and narrative shall be prepared by a professionally certified landscape architect, engineer or architect.

(c) ***Design Guidelines and Dimensional Standards***

Each site plan or master plan and narrative shall provide a comprehensive set of design guidelines that demonstrate the project will be appropriate within the context of the surrounding properties and the larger community. All bulk, area, and dimensional standards shall be established by the Town Council at the time of approval.

(d) ***General Development Standards***

Unless granted Variance by the Board of Adjustment, all standards specified in §§ 155.400 through 155.405 shall apply.

(e) ***Specific Use Standards***

Unless modified standards are approved by the Town Council through one or more conditions, the specific use standards in Article 3 of this Ordinance shall apply to all Conditional Zoning Districts.

~~(e)~~(f) ***Resource Conservation Areas***

See Article 5 for restrictions on the use of resource conservation areas.

(f)(g) Recreation and Open Space

The site plan or master plan and narrative shall meet or exceed the recreation and open space requirements of an open space residential subdivision (see § 155.203(H)).

(g)(h) Stormwater Management

The site plan or master plan and narrative shall contain a comprehensive stormwater management plan prepared by a professional engineer licensed in the state.

(h)(i) Phasing

If development is proposed to occur in phases, the site plan or master plan and narrative shall include a phasing plan for the development, and if appropriate, with specific build-out dates. Guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents and tenants of the project, or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.

(i)(j) Landscaping, Buffering, and Screening

As otherwise required by Article 4, with a minimum requirement of a 15 ft wide buffer meeting Class "C" perimeter buffer planting requirements.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2012-04-02, passed 4-2-12; Am. Ord. 2012-12-02, passed 12-3-12; Am. Ord. 2014-06-10, passed 6-16-14; Am. Ord. 2017-08-05, adopted 8/7/2017)

§ 155.202 LAND USE REGULATIONS

(A) USE REGULATIONS TABLE

The use regulations table is subject to the explanation as set forth below.

(1) Key to Types of Use

- (a) **Permitted.** A "P" indicates that a use is permitted in the respective district subject to the specific use standards in §§ 155.300 through 155.311. Such uses are also subject to all other applicable requirements of this chapter.
- (b) **Special Use Review.** An "S" indicates a use that may be permitted in the respective general use district only where approved by the Town Council upon presentation of competent, material, and substantial evidence establishing compliance with one or more general standards requiring that judgment and discretion be exercised as well as compliance with specific standards, and in accordance with § 155.711. Special uses are subject to all other applicable requirements of this chapter, including the specific use standards contained in §§ 155.300 through 155.311, except where such use standards are expressly modified by the Town Council as part of the special use approval.
- (c) **Conditional Zoning District Required.** A "C" in a cell of the principal use table indicates that a specific use type is permitted as part of the approval of a Conditional Zoning District, provided the Conditional Zoning District request is accompanied by either a Site Plan or Master Plan and Narrative in accordance with Section 155.203(L) of this Article.
- (d) **Specific Use Section.** The "Specific Use Section" column on the table is a cross-reference to any specific use standard listed in §§ 155.300 through 155.311. Where no cross-reference is shown, no additional use standard shall apply.
- (e) **Uses Not Permitted.** A blank cell in the use table indicates that a use is not permitted in the respective district. Except as pursuant to §155.110 and §155.300, the following uses are entirely prohibited within the jurisdiction of the Town, although such enumeration shall not necessarily be deemed exclusive or all-inclusive:
 - 1. Open dump;
 - 2. Outdoor gun range; and
 - 3. Any use prohibited by an applicable overlay zoning district.

(2) Uses

Table 2-1 "Use Regulations" lists the principal uses regulated by this chapter for conventional districts. For conditional zoning districts see § 155.200(C), for overlay districts see § 155.200(D), and for accessory structures and uses see § 155.308. In all cases, additional clarification and/or restrictions may be found in the Specific Use Standards (Article 3 of this chapter).

§ 155.202 - Table 2-1 Use Regulations

Use Type			Zoning Districts													Specific Use Section
		Residential					Nonresidential									
		R-E	R-10	R-8	R-6	C	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF		
Residential Uses																
Group Care Home (2-6 residents)	P	P	P	P											\$155.301(A)	
Group Care Home (7-12 Residents)	S	S	S	S		S	S		S						\$155.301(A)	
Group Care Home (13+ Residents)							S		S						\$155.301(A)	
Apartments					C										\$155.301(B)	
Boarding House				S			S		S						\$155.301(C)	
Duplex					C										\$155.301(G)	
Manufactured Home	P														\$155.301(D)	
Manufactured Home Park	S														\$155.301(E)	
Nursing Home (Congregate Living Facility)	P						P		P	P					\$155.301(F)	
Townhouse					C										\$155.301(H)	
Security/Caretaker Quarters	P									S			S		\$155.301(I)	
Single Family House	P	P	P	P		P									\$155.301(J)	
Upper-story Residence						P	P	P	P	P					\$155.301(K)	
Zero Lot Line House		P	P	P											\$155.301(L)	
Public and Civic Uses																
Assembly	S						P	S	S	P			P		\$155.302(A)	
Cemetery	P									S			P		\$155.302(B)	
Church or Place of Worship	S	S	S	S			P		P	S					\$155.302(C)	
College or University							P						P		\$155.302(D)	
Day Care Facility	S	S	S	S		S	P		P	P					\$155.302(E)	
Government Service	S	S	S	S		P	P	P	P	P	P	P	P		\$155.302(F)	
Hospital or Medical Center							P			P			P		\$155.302(G)	
School (Elementary or Secondary)	S	S	S	S			P						P		\$155.302(H)	
School (Technical, Trade or Business)	S	S	S	S			P			P	P	P	P		\$155.302(I)	
Recreational Uses																
Entertainment, Indoor							P	S	P	P	P		P		\$155.303(A)	
Entertainment, Outdoor										S	P		P		\$155.303(B)	
Fitness/Recreation Center							P	S	P	P	P		P		\$155.303(C)	
Golf Course	P	P	P	P									P		\$155.303(D)	
Gun Range								S		S	S	S	S		\$155.303(E)	
Park	P	P	P	P		P	P	S	P				P		\$155.303(F)	
Stable, Private	P														\$155.303(G)	
Agricultural Uses																
Agriculture, Livestock	S														\$155.304(A)	
Agriculture, Sales and Service	P											S			\$155.304(B)	
Nursery	P						P	S	P	P			P		\$155.304(C)	
Commercial Uses																
Adult Oriented Business											S				\$155.305(A)	
Bed and Breakfast	P			S		S		S							\$155.305(B)	
Car Wash/Auto Detailing									P	P					\$155.305(C)	
Contractor Office							P			P	P	P			\$155.305(D)	
Convenience Store with Gas Sales									P	P	P				\$155.305(E)	
Creative Studio						P	P	P	P	P					\$155.305(F)	
Financial Institution							P	S	P	P					\$155.305(G)	
Funeral Home	S					P	P								\$155.305(H)	
Hotel/Motel							P	S	P	P					\$155.305(I)	
Kennel	S								P	P					\$155.305(J)	
Laundry Services									P	P	P	P			\$155.305(K)	
Lounge, Cocktail								S	S	S	S				\$155.305(L)	
Microbrewery								P	S	P	P	P			\$155.305(M)	
Publisher							P			P	P	P			\$155.305(N)	
Office, General						P	P	P	P	P	P		P		\$155.305(O)	
Office, Medical						P	P	P	P	P					\$155.305(P)	
Outdoor Seating/Sidewalk Cafe							P	P	P	P					\$155.305(Q)	
Parking Lot							S	S	S	S	S	S	S		\$155.305(R)	

Article 2 / Zoning Districts
§155.202 Land Use Regulations

Use Type		Zoning Districts													Specific Use Section
	Residential					Nonresidential									
	R-E	R-10	R-8	R-6	C	O-R	O-I	B-1	B-2	B-3	I-1	I-2	PF		
Pawn Shop										P	P			\$155.305(S)	
Radio or Television Studio										P	P	P		\$155.305(T)	
Restaurant							P	P	P	P				\$155.305(U)	
Retail Sales								P	P	P	P			\$155.305(V)	
Self-storage Facility										S	P			\$155.305(W)	
Service						P	P	P	P	P				\$155.305(X)	
Tattoo Parlor										P				\$155.305(Y)	
Towing Service and Storage										S	S	P		\$155.305(Z)	
Vehicle Repair or Service										S	P	P		\$155.305(AA)	
Vehicle Sales and Rental										S	P	P		\$155.305(BB)	
Veterinary Clinic							P		P	P				\$155.305(CC)	
Industrial Uses															
Building Supplies, Wholesale											P	P		\$155.306(A)	
Crematorium											P	P		\$155.306(B)	
Gas and Fuel, Wholesale											P	P	P	\$155.306(C)	
Laboratory, Research							P				P	P		\$155.306(D)	
Manufacturing, Light											P	P		\$155.306(E)	
Manufacturing, Heavy												P		\$155.306(F)	
Research and Development							P				P	P		\$155.306(G)	
Warehouse, Freight Movement										S	P	P		\$155.306(H)	
Utilities															
Recycling Center											S	P	P	\$155.307(A)	
Renewable Energy Facility	S										S	S	S	\$155.307(B)	
Telecommunication Facility	S	S	S	S		S	S	S	S	S	S	S	S	\$155.307(C)	
Utility, Minor	P	P	P	P		P	P	P	P	P	P	P	P	\$155.307(D)	
Utility, Major											P	P	P	\$155.307(E)	
Waste Service											S	P	P	\$155.307(F)	
Accessory Uses															
Accessory Dwelling Unit	S	S	S	S										155.308(C)(1)	
Food Truck							P	P	P	P	P	P	P	155.308(D)(2)	
Day Care Facility	S	S	S	S			P		P	P	P	P	P	155.308(D)(3)	
In-Home Daycare	P	P	P	P		P								155.308(C)(3)	
Park										P			P	155.308(D)(4)	
Outdoor Display/Sales								P	P	P				155.308(D)(5)	
Outdoor Dining							P	P	P	P				155.308(D)(6)	
Outdoor Storage, Limited										S	P	P	P	155.308(D)(7)	
Outdoor Storage, General											P	P	P	155.308(D)(8)	
		Key:													
		P – Permitted													
		S – Special Use Permit required in the zoning district only if approved by the Town Council (TC) (§ 155.711)													
		C – Conditional Zoning District required for this use (§155.203(L) and §155.705)													

(Ord. 2005-11-02, adopted 11/21/2005; Am. Ord. 2006-06-01, adopted 06/19/2006; Am. Ord. 2007-04-05, adopted 04/02/2007; Am. Ord. 2007-05-02, adopted 05/07/2007; Am. Ord. 2009-06-06, adopted 06/01/2009; Am. Ord. 2009-08-03, adopted 08/03/2009; Am. Ord. 2012-01-04, adopted 01/03/2012; Am. Ord. 2012-04-02, adopted 04/02/2012; Am. Ord. 2012-12-02, adopted 12/03/2012; Am. Ord. 2014-12-02, adopted 12/01/2014; Ord. 2015-09-03, adopted 09/28/2015; Am. Ord 2016-04-04, passed 04-04-2016; Ord. 2017-04-06, approved 04/03/2017)

the B-1 District, no townhouse or apartment shall be established on a parcel less than 20,000 square feet in area.

- (b) Upper-story residential is permitted on the upper floors of a nonresidential building and shall conform to the lot, yard and bulk requirements of the principal building.
- (c) Except in the B-1 District, townhouse and apartment parcels and upper-story residential units shall not exceed a density of 12 units per acre in a standard residential district.

PART 3. CONDITIONAL ZONING DISTRICTS

(L) CONDITIONAL ZONING DISTRICT STANDARDS

(1) General Provisions for all Conditional Zoning Districts

(a) *Rezoning Criteria*

In approving a rezoning for a conditional district, the Town Council shall find the district designation and site plan or master plan and narrative comply with the general standards of this section and the specific criteria of (§ 155.705).

(b) *Site Plan or Master Plan and Narrative*

The development proposed in the site plan or master plan and narrative is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties. The site plan or master plan and narrative shall be prepared by a professionally certified landscape architect, engineer or architect.

(c) *Design Guidelines and Dimensional Standards*

Each site plan or master plan and narrative shall provide a comprehensive set of design guidelines that demonstrate the project will be appropriate within the context of the surrounding properties and the larger community. All bulk, area, and dimensional standards shall be established by the Town Council at the time of approval.

(d) *General Development Standards*

Unless granted Variance by the Board of Adjustment, all standards specified in §§ 155.400 through 155.405 shall apply.

(e) *Specific Use Standards*

Unless modified standards are approved by the Town Council through one or more conditions, the specific use standards in Article 3 of this Ordinance shall apply to all Conditional Zoning Districts.

(f) *Resource Conservation Areas*

See Article 5 for restrictions on the use of resource conservation areas.

(g) ***Recreation and Open Space***

The site plan or master plan and narrative shall meet or exceed the recreation and open space requirements of an open space residential subdivision (see § 155.203(H)).

(h) ***Stormwater Management***

The site plan or master plan and narrative shall contain a comprehensive stormwater management plan prepared by a professional engineer licensed in the state.

(i) ***Phasing***

If development is proposed to occur in phases, the site plan or master plan and narrative shall include a phasing plan for the development, and if appropriate, with specific build-out dates. Guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents and tenants of the project, or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.

(j) ***Landscaping, Buffering, and Screening***

As otherwise required by Article 4, with a minimum requirement of a 15 ft wide buffer meeting Class “C” perimeter buffer planting requirements.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2012-04-02, passed 4-2-12; Am. Ord. 2012-12-02, passed 12-3-12; Am. Ord. 2014-06-10, passed 6-16-14; Am. Ord. 2017-08-05, adopted 8/7/2017)

(d) ***Project Boundary Buffers***

Project boundary buffers are established to mitigate the effect of specific types of development on adjacent properties. Where project boundaries coincide with district boundaries the following project boundary buffers shall apply.

1. Open Space Residential Subdivision

A Class C buffer is required along all project boundaries of an open space subdivision (see § 155.203(H)(8)).

2. Planned Development

- A. A Class C buffer is required along all project boundaries of a planned development.
- B. The continuous visual barrier of Class C buffers is not required for the street-side of non-residential Planned Developments where they abut major or minor thoroughfares.
- C. A Class B buffer may be used when a Planned Development - Commercial (PD-C) abuts a non-residential district (see § 155.203(L)).

3. Manufactured Home Park

A Class C buffer is required along all project boundaries of a manufactured home park (see § 155.301(G)(4)).

(3) **Buffer Classification**

Figure 4-1 establishes the specific width and plant material for each buffer classification. The applicant may choose any alternative (1, 2, or 3) in the respective buffer classification. Buffers planted below overhead utility lines shall apply any of the allowed buffer alternatives, except that understory trees shall replace any canopy trees at a rate of two understory trees per required canopy tree.

(d) **Project Boundary Buffers**

Project boundary buffers are established to mitigate the effect of specific types of development on adjacent properties. Where project boundaries coincide with district boundaries the following project boundary buffers shall apply.

1. Open Space Residential Subdivision

A Class C buffer is required along all project boundaries of an open space subdivision (see § 155.203(H)(8)).

2. ~~Planned Development~~Conditional Zoning Districts

A. A Class C buffer is required along all project boundaries of a ~~planned development~~Conditional Zoning District.

B. The continuous visual barrier of Class C buffers is not required for the street-side of non-residential ~~Planned Developments~~Conditional Zoning Districts where they abut major or minor thoroughfares.

C. A Class B buffer may be used when a ~~Planned Development~~Conditional Zoning District - Commercial (~~PD-CCZ-C~~) abuts a non-residential district (see § 155.203(L)).

3. Manufactured Home Park

A Class C buffer is required along all project boundaries of a manufactured home park (see § 155.301(G)(4)).

(3) **Buffer Classification**

Figure 4-1 establishes the specific width and plant material for each buffer classification. The applicant may choose any alternative (1, 2, or 3) in the respective buffer classification. Buffers planted below overhead utility lines shall apply any of the allowed buffer alternatives, except that understory trees shall replace any canopy trees at a rate of two understory trees per required canopy tree.

(d) ***Project Boundary Buffers***

Project boundary buffers are established to mitigate the effect of specific types of development on adjacent properties. Where project boundaries coincide with district boundaries the following project boundary buffers shall apply.

1. Open Space Residential Subdivision

A Class C buffer is required along all project boundaries of an open space subdivision (see § 155.203(H)(8)).

2. Conditional Zoning Districts

- A. A Class C buffer is required along all project boundaries of a Conditional Zoning District.
- B. The continuous visual barrier of Class C buffers is not required for the street-side of non-residential Conditional Zoning Districts where they abut major or minor thoroughfares.
- C. A Class B buffer may be used when a Conditional Zoning District - Commercial (CZ-C) abuts a non-residential district (see § 155.203(L)).

3. Manufactured Home Park

A Class C buffer is required along all project boundaries of a manufactured home park (see § 155.301(G)(4)).

(3) **Buffer Classification**

Figure 4-1 establishes the specific width and plant material for each buffer classification. The applicant may choose any alternative (1, 2, or 3) in the respective buffer classification. Buffers planted below overhead utility lines shall apply any of the allowed buffer alternatives, except that understory trees shall replace any canopy trees at a rate of two understory trees per required canopy tree.

§ 155.705 CONDITIONAL ZONING DISTRICT**(A) APPLICABILITY**

- (1) Conditional zoning district review (also known as conditional rezoning) shall occur in accordance with the provisions of this section.
- (2) The Town Council shall consider conditional districts, as may be required from time to time.
- (3) All requirements shall be met within the boundaries of the area being rezoned. If all of the requirements cannot be met on the site being rezoned, prior to advertisement of the public hearing, the rezoning shall be expanded to include all property necessary to meet zoning requirements.
- (4) A conditional district is not appropriate for developments that could be substantially achieved through traditional subdivision and conventional district rezoning.
- (5) At a minimum, and to avoid the potential for spot zoning, a conditional zoning application shall include a minimum amount of land of either:
 - (a) 5 acres, or
 - (b) One full city block (either existing or proposed) of at least 1 acre whose abutting street network connects to or extends in alignment with the existing public street network.

(B) INITIATION OF AMENDMENT

An owner of land within the jurisdiction of the Town (or a duly authorized agent or representative) may petition the Town Council to establish a conditional district.

(C) PRE-APPLICATION CONFERENCE

All applicants petitioning for a conditional district shall schedule a pre-application conference with the Planning Director in accordance with § 155.702(a).

(D) NEIGHBORHOOD MEETING

All applicants petitioning for a conditional district shall hold a neighborhood meeting in accordance with § 155.702(b).

(E) APPLICATION REQUIREMENTS

- (1) Concurrent with a request for establishment of a conditional district, an applicant shall submit a master plan, as detailed in this section, to govern the development and maintenance of the land within the conditional district. The master plan shall be prepared by a professional landscape architect, engineer, or architect properly licensed and in good standing in North Carolina.

- (2) All applications for establishment of a conditional district shall be submitted in accordance with § 155.702(C).
- (3) A traffic impact analysis shall be required if the proposed master plan meets the thresholds established in § 155.708.

(F) **NOTICE AND PUBLIC HEARINGS**

The Town shall hold all required public hearings and give notice in accordance with § 155.702(d).

(G) **ACTION BY PLANNING DIRECTOR**

- (1) Upon submission of a completed application, the Planning Director shall schedule the master plan for review by the Technical Review Committee. The Technical Review Committee shall review the master plan for consistency with the requirements of this Chapter.
- (2) Upon completion of the technical review, the Planning Director may meet with the applicant to discuss any changes in development design.
- (3) The Planning Director shall prepare a staff report that reviews the application in light of comments provided by the Technical Review Committee, in light of the adopted plans and policies of the town, and the general requirements of this chapter. The report, master plan and any related application materials shall be forwarded to the Town Council.

(H) **ACTION BY THE PLANNING BOARD**

- (1) The Planning Board shall make a recommendation on the application to the Town Council. The Planning Board's recommendation shall include a written statement to the Town Council describing whether its recommendation is consistent with the adopted plans and policies of the Town. If the Planning Board fails to make a recommendation, the Town Council may process the request without a recommendation.
- (2) Following Planning Board review, the Planning Director shall forward the completed conditional district request and any related materials, including the Planning Board recommendation (if applicable), to the Town Council for final action.

(I) **ACTION BY TOWN COUNCIL**

- (1) Before taking action on a conditional district proposal, the Town Council shall consider the recommendation of the Planning Board (if applicable) and the Planning Director.
- (2) The Town Council shall approve, approve with conditions, or disapprove the conditional district. Any conditions of approval must be signed (or declined) by the applicant prior to the Council rendering a decision.
- (3) Concurrently with adopting, denying, or remanding any conditional district, the Town Council shall adopt a statement describing whether its action is consistent with the adopted plans and policies of the Town and explaining why the Town Council considers the action taken to be reasonable and in the public interest. If the Council adopts a conditional district that is

inconsistent with any adopted future land use map a note must be placed on the map or maps that an amendment inconsistent with the map has been adopted and that the map is deemed amended.

(J) **CONDITIONAL ZONING DISTRICT APPROVAL CRITERIA**

In connection with its legislative decision on a conditional zoning district request, the Town Council may consider factors including, but not limited to, the following:

- (1) Consistency with the adopted plans and policies of the Town;
- (2) Suitability of the subject property for uses permitted by the current versus the proposed conditional district;
- (3) Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town;
- (4) The capacity of adequate public facilities and services including schools, roads, recreation facilities wastewater treatment and water supply facilities and stormwater drainage facilities for the proposed conditional district;
- (5) It has been determined that the legal purposes for which zoning exists are not contravened;
- (6) It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare; and
- (7) It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

(K) **MASTER PLAN CONTENTS AND APPROVAL CRITERIA**

- (1) At a minimum, the master plan shall designate:
 - (a) Where and which uses or groups of uses will occur.
 - (b) The proposed intensity/density of those uses.
 - (c) The general location of the internal and external network of public rights-of-way and public infrastructure.
 - (d) All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering.
 - (e) Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems;

- (2) The master plan shall include and the applicant shall be responsible for successfully addressing the following:
 - (a) Compliance with § 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter;
 - (b) Consistency with the Clayton General Design Guidelines;
 - (c) Conformance of the proposal with the stated purpose of the requested conditional zoning district;
 - (d) Compatibility of the proposed development with the adjacent community;
 - (e) The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out;
 - (f) Compatible relationships between each component of the overall project;
 - (g) Self-sufficiency of each phase of the overall project;
 - (h) The fiscal impact of the proposal and the proposed financing of required improvements;
 - (i) The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community; and
 - (j) The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

(L) **ACTION AFTER APPROVAL**

- (1) Upon approval of a conditional zoning district by the Town Council, and on recordation of the approved master plan, the district is deemed established. Properly executed documents shall be returned to the office of the Town Clerk for recording no later than 90 days from the date of approval or the approval shall be null and void. All documents (including the approved master plan) shall be an integral part of the approved proposal.
- (2) The approved conditional district and associated master plan shall run with the land and shall be binding on the original applicant as well as any successors, assigns and heirs. The approved master plan shall be recorded in the Johnston County Register of Deeds office and the Zoning Map amended.
- (3) Approval of a conditional district rezoning and associated master plan does not constitute site plan approval or subdivision approval (if the property is to be further subdivided), except where the master plan meets the requirements for and is approved as a preliminary plat.
- (4) Property to be further subdivided shall obtain approval in accordance with § 155.706. Where a preliminary plat has been approved, the applicant may move forward to provide construction plans and a final plat.

- (5) Property not to be further subdivided shall obtain site plan approval as set forth in § 155.707.
- (6) Special uses identified as such in the approved master plan require approval in accordance with § 155.711.
- (7) The master plan shall run with the land perpetually, or until a subsequent rezoning is approved.

(M) **TIME LAPSE BETWEEN SIMILAR APPLICATIONS**

- (1) In the event of a withdrawal of an application prior to action by the Town Council, no application may be filed requesting the same or substantively similar conditional district contained in the withdrawn application prior to the expiration of a minimum period of six months from the withdrawal of the application.
- (2) When the Town Council has voted on a conditional district and the proposed rezoning has failed to be adopted, then the application shall be deemed to have expired.
- (3) No subsequent application requesting a conditional district for any parcel contained in an application which has expired may be made prior to the expiration of a minimum period of six months from the date of expiration.
- (4) No subsequent application requesting the same zoning category for any parcel contained in an application which has expired may be filed prior to the expiration of a minimum period of one year from the expiration.
- (5) The Town Council, by a three-fourths majority vote, may waive the time-lapse requirements of this section if the Town Council deems it to be in the public interest to do so.

Approved master plan modifications

- (6) Amendments or modifications to an approved master plan, if minor in scope, shall be approved administratively by the Planning Director. Minor modifications shall include up to 10% modifications (by area, intensity, or dwelling units) from the original approval to the approved mixture of uses (so long as the maximums stated are not exceeded), adjustments to phasing, and the realignment of internal transportation infrastructure provided connectivity is not reduced. Changes in boundaries between land uses are permitted so long as the boundary abutting outside zoning districts does not change and the boundary between areas within the conditional district does not shift more than 100' for master plans covering 20 acres or less, 200' for master plans of 20-100 acres, or 300' for master plans of greater than 100 acres. Minor modifications to the typical project details, which include but are not limited to signage, lighting, parking, amenities, and landscape requirements shall also be approved administratively by the Planning Director provided they conform to all other aspects of the approved master plan, this Chapter, and other Town policies and specifications, as appropriate. Master plan modifications that require the judgement of a licensed landscape architect, engineer, or architect are not minor modifications.

- (7) Major modifications include anything not identified as minor. Major modifications shall require resubmittal and reconsideration by per this Section. Major modifications shall also include any proposed revisions that are deemed by the Planning Director to be inconsistent with the adopted plans and policies of the Town, or the conditions of the district, or that would otherwise negatively impact surrounding properties in any manner exceeding the originally approved master plan.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2008-06-01, passed 6-2-08; Am. Ord. 2009-03-04, passed 3-2-09; Am. Ord. 2015-02-01, passed 2-2-15; Am. Ord. 2016-04-04, passed 04-04-2016; Am. Ord. 2018-07-02, adopted 07-16-2018)

§ 155.705 CONDITIONAL ZONING DISTRICT**(A) APPLICABILITY**

- (1) Conditional zoning district review (also known as conditional rezoning) shall occur in accordance with the provisions of this section.
- (2) The Town Council shall consider conditional districts, as may be required from time to time.
- (3) All requirements shall be met within the boundaries of the area being rezoned. If all of the requirements cannot be met on the site being rezoned, prior to advertisement of the public hearing, the rezoning shall be expanded to include all property necessary to meet zoning requirements.
- (4) A conditional district is not appropriate for developments that could be substantially achieved through traditional subdivision and conventional district rezoning.
- (5) A conditional zoning district of less than 20 acres in size and only proposing a single principal use shall require a Site Plan to be submitted with the rezoning request. A separate site plan application is not required.
- (6) A conditional zoning district 20 acres in size or larger, or proposing multiple principal uses, shall require a master plan and narrative to be submitted with the rezoning request.
- ~~(5) At a minimum, and to avoid the potential for spot zoning, a conditional zoning application shall include a minimum amount of land of either:~~
 - ~~(a) 5 acres, or~~
 - ~~(b) One full city block (either existing or proposed) of at least 1 acre whose abutting street network connects to or extends in alignment with the existing public street network.~~

(B) INITIATION OF AMENDMENT

An owner of land within the jurisdiction of the Town (or a duly authorized agent or representative) may petition the Town Council to establish a conditional district.

(C) PRE-APPLICATION CONFERENCE

All applicants petitioning for a conditional district shall schedule a pre-application conference with the Planning Director in accordance with § 155.702(a).

(D) NEIGHBORHOOD MEETING

All applicants petitioning for a conditional district shall hold a neighborhood meeting in accordance with § 155.702(b).

(E) APPLICATION REQUIREMENTS

- (1) Concurrent with a request for establishment of a conditional district, an applicant shall submit a site plan (meeting the requirements in §155.707) or a master plan and narrative document, as detailed in this section, to govern the development and maintenance of the land within the conditional district. The master plan shall be prepared by a professional landscape architect, engineer, or architect properly licensed and in good standing in North Carolina.
- (2) All applications for establishment of a conditional district shall be submitted in accordance with § 155.702(C).
- (3) A traffic impact analysis shall be required if the proposed master plan meets the thresholds established in § 155.708.

(F) **NOTICE AND PUBLIC HEARINGS**

The Town shall hold all required public hearings and give notice in accordance with § 155.702(d).

(G) **ACTION BY PLANNING DIRECTOR**

- (1) Upon submission of a completed application, the Planning Director shall schedule the ~~master plan~~Conditional Zoning District for review by the Technical Review Committee. The Technical Review Committee shall review the ~~master plan~~Conditional Zoning District for consistency with the requirements of this Chapter.
- (2) Upon completion of the technical review, the Planning Director may meet with the applicant to discuss any changes in development design.
- (3) The Planning Director shall prepare a staff report that reviews the application in light of comments provided by the Technical Review Committee, in light of the adopted plans and policies of the town, and the general requirements of this chapter. The report, ~~master plan~~Conditional Zoning District request and any related application materials shall be forwarded to the Town Council.

(H) **ACTION BY THE PLANNING BOARD**

- (1) The Planning Board shall make a recommendation on the application to the Town Council. The Planning Board's recommendation shall include a written statement to the Town Council describing whether its recommendation is consistent with the adopted plans and policies of the Town. If the Planning Board fails to make a recommendation, the Town Council may process the request without a recommendation.
- (2) Following Planning Board review, the Planning Director shall forward the completed conditional district request and any related materials, including the Planning Board recommendation (if applicable), to the Town Council for final action.

(I) **ACTION BY TOWN COUNCIL**

- (1) Before taking action on a conditional district proposal, the Town Council shall consider the recommendation of the Planning Board (if applicable) and the Planning Director.
- (2) The Town Council shall approve, approve with conditions, or disapprove the conditional district. Any conditions of approval must be signed (or declined) by the applicant prior to the Council rendering a decision.
- (3) Concurrently with adopting, denying, or remanding any conditional district, the Town Council shall adopt a statement describing whether its action is consistent with the adopted plans and policies of the Town and explaining why the Town Council considers the action taken to be reasonable and in the public interest. If the Council adopts a conditional district that is inconsistent with any adopted future land use map a note must be placed on the map or maps that an amendment inconsistent with the map has been adopted and that the map is deemed amended.

(J) **CONDITIONAL ZONING DISTRICT APPROVAL CRITERIA**

In connection with its legislative decision on a conditional zoning district request, the Town Council may consider factors including, but not limited to, the following:

- (1) Consistency with the adopted plans and policies of the Town;
- (2) Suitability of the subject property for uses permitted by the current versus the proposed conditional district;
- (3) Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town;
- (4) The capacity of adequate public facilities and services including schools, roads, recreation facilities wastewater treatment and water supply facilities and stormwater drainage facilities for the proposed conditional district;
- (5) It has been determined that the legal purposes for which zoning exists are not contravened;
- (6) It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare; and
- (7) It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

(K) **MASTER PLAN AND NARRATIVE CONTENTS AND APPROVAL CRITERIA**

- (1) At a minimum, the master plan shall designate:
 - (a) Where and which uses or groups of uses will occur.
 - (b) The proposed intensity/density of those uses.

- (c) The general location of the internal and external network of public rights-of-way and public infrastructure.
- (d) All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering.
- (e) Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems.ﷴ

(2) At a minimum, the narrative shall include:

- (a) A description of the proposed development, including any phasing, development timeline and uses.
- (b) A list of permitted and/or prohibited uses in the Conditional Zoning District.
- (c) A description of how the proposed Conditional Zoning District will meet the Approval Criteria listed in subsection J above.
- (d) Description of how the development will address stormwater requirements.
- (e) Description of how the development will be served by water, sewer and electric providers.
- (f) Dimensional standards for the development.
- (g) Architectural standards and elevations (when possible) for residential and non-residential structures in the development.
- (h) A list of proposed conditions for the development. At a minimum, the conditions should address permitted and/or prohibited uses, dimensional criteria, architectural standards, transportation improvements, water/sewer/electric infrastructure requirements, and any "Community Benefit Bonus Points" taken in a Wastewater Allocation request.

(L) SITE PLAN OR MASTER PLAN AND NARRATIVE APPROVAL CRITERIA

- (1) The Site Plan shall include and the applicant shall be responsible for successfully addressing the Approval Criteria listed in Article 7, Section 155.707 – Site Plan Review.
- (2) The master plan and narrative shall include and the applicant shall be responsible for successfully addressing the following:
 - (a) Compliance with § 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter;
 - (b) Consistency with the Clayton General Design Guidelines;

- (c) Conformance of the proposal with the stated purpose of the requested conditional zoning district;
- (d) Compatibility of the proposed development with the adjacent community;
- (e) The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out;
- (f) Compatible relationships between each component of the overall project;
- (g) Self-sufficiency of each phase of the overall project;
- (h) The fiscal impact of the proposal and the proposed financing of required improvements;
- (i) The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community; and
- (j) The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

(M) ACTION AFTER APPROVAL

- (1) Upon approval of a conditional zoning district by the Town Council, and on recordation of the approved master plan, the district is deemed established. Properly executed documents shall be returned to the office of the Town Clerk for recording no later than 90 days from the date of approval or the approval shall be null and void. All documents (including the approved site plan or master plan and narrative) shall be an integral part of the approved proposal.
- (2) The approved conditional district and associated site plan or master plan and narrative shall run with the land and shall be binding on the original applicant as well as any successors, assigns and heirs. The approved site plan or master plan and narrative shall be recorded in the Johnston County Register of Deeds office and the Zoning Map amended.
- (3) Approval of a conditional district rezoning and associated master plan does not constitute site plan approval or subdivision approval (if the property is to be further subdivided), except where a site plan has been submitted in place of a master plan or the master plan meets the requirements for and is approved as a preliminary plat.
- (4) Property to be further subdivided shall obtain approval in accordance with § 155.706. Where a preliminary plat has been approved, the applicant may move forward to provide construction plans and a final plat.
- (5) Property not to be further subdivided shall obtain site plan approval as set forth in § 155.707, unless a site plan is approved in conjunction with the Conditional Zoning District.
- (6) Uses which require Special Use Review under conventional zoning shall be exempt from the provisions of §155.711 Special Use Review if designated as Permitted on the approved Master Plan.

- (7) The site plan or master plan and narrative shall run with the land perpetually, or until a subsequent rezoning is approved.

(M)(N) TIME LAPSE BETWEEN SIMILAR APPLICATIONS

- (1) In the event of a withdrawal of an application prior to action by the Town Council, no application may be filed requesting the same or substantively similar conditional district contained in the withdrawn application prior to the expiration of a minimum period of six months from the withdrawal of the application.
- (2) When the Town Council has voted on a conditional district and the proposed rezoning has failed to be adopted, then the application shall be deemed to have expired.
- (3) No subsequent application requesting a conditional district for any parcel contained in an application which has expired may be made prior to the expiration of a minimum period of six months from the date of expiration.
- (4) No subsequent application requesting the same zoning category for any parcel contained in an application which has expired may be filed prior to the expiration of a minimum period of one year from the expiration.
- (5) The Town Council, by a three-fourths majority vote, may waive the time-lapse requirements of this section if the Town Council deems it to be in the public interest to do so.

(O) APPROVED SITE PLAN OR MASTER PLAN AND NARRATIVE MODIFICATIONS

~~(6)~~(1) Amendments or modifications to an approved site plan or master plan and narrative, if minor in scope, shall be approved administratively by the Planning Director. Minor modifications shall include up to 10% modifications (by area, intensity, or dwelling units) from the original approval to the approved mixture of uses (so long as the maximums stated are not exceeded), adjustments to phasing, and the realignment of internal transportation infrastructure provided connectivity is not reduced. Changes in boundaries between land uses are permitted so long as the boundary abutting outside zoning districts does not change and the boundary between areas within the conditional district does not shift more than 100' for master plans covering 20 acres or less, 200' for master plans of 20-100 acres, or 300' for master plans of greater than 100 acres. Minor modifications to the typical project details, which include but are not limited to signage, lighting, parking, amenities, and landscape requirements shall also be approved administratively by the Planning Director provided they conform to all other aspects of the approved site plan or master plan and narrative, this Chapter, and other Town policies and specifications, as appropriate. Site Plan or Master plan and narrative modifications that require the judgement of a licensed landscape architect, engineer, or architect are not minor modifications.

~~(7)~~(2) Major modifications include anything not identified as minor. Major modifications shall require resubmittal and reconsideration by per this Section. Major modifications shall also include any proposed revisions that are deemed by the Planning Director to be inconsistent with the adopted plans and policies of the Town, or the conditions of the district, or that

would otherwise negatively impact surrounding properties in any manner exceeding the originally approved site plan or master plan and narrative.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2008-06-01, passed 6-2-08; Am. Ord. 2009-03-04, passed 3-2-09; Am. Ord. 2015-02-01, passed 2-2-15; Am. Ord. 2016-04-04, passed 04-04-2016; Am. Ord. 2018-07-02, adopted 07-16-2018)

§ 155.705 CONDITIONAL ZONING DISTRICT

(A) **APPLICABILITY**

- (1) Conditional zoning district review (also known as conditional rezoning) shall occur in accordance with the provisions of this section.
- (2) The Town Council shall consider conditional districts, as may be required from time to time.
- (3) All requirements shall be met within the boundaries of the area being rezoned. If all of the requirements cannot be met on the site being rezoned, prior to advertisement of the public hearing, the rezoning shall be expanded to include all property necessary to meet zoning requirements.
- (4) A conditional district is not appropriate for developments that could be substantially achieved through traditional subdivision and conventional district rezoning.
- (5) A conditional zoning district of less than 20 acres in size and only proposing a single principal use shall require a Site Plan to be submitted with the rezoning request. A separate site plan application is not required.
- (6) A conditional zoning district 20 acres in size or larger, or proposing multiple principal uses, shall require a master plan and narrative to be submitted with the rezoning request.

(B) **INITIATION OF AMENDMENT**

An owner of land within the jurisdiction of the Town (or a duly authorized agent or representative) may petition the Town Council to establish a conditional district.

(C) **PRE-APPLICATION CONFERENCE**

All applicants petitioning for a conditional district shall schedule a pre-application conference with the Planning Director in accordance with § 155.702(a).

(D) **NEIGHBORHOOD MEETING**

All applicants petitioning for a conditional district shall hold a neighborhood meeting in accordance with § 155.702(b).

(E) **APPLICATION REQUIREMENTS**

- (1) Concurrent with a request for establishment of a conditional district, an applicant shall submit a site plan (meeting the requirements in §155.707) or a master plan and narrative document, as detailed in this section, to govern the development and maintenance of the land within the conditional district. The master plan shall be prepared by a professional landscape architect, engineer, or architect properly licensed and in good standing in North Carolina.

- (2) All applications for establishment of a conditional district shall be submitted in accordance with § 155.702(C).
- (3) A traffic impact analysis shall be required if the proposed master plan meets the thresholds established in § 155.708.

(F) **NOTICE AND PUBLIC HEARINGS**

The Town shall hold all required public hearings and give notice in accordance with § 155.702(d).

(G) **ACTION BY PLANNING DIRECTOR**

- (1) Upon submission of a completed application, the Planning Director shall schedule the Conditional Zoning District for review by the Technical Review Committee. The Technical Review Committee shall review the Conditional Zoning District for consistency with the requirements of this Chapter.
- (2) Upon completion of the technical review, the Planning Director may meet with the applicant to discuss any changes in development design.
- (3) The Planning Director shall prepare a staff report that reviews the application in light of comments provided by the Technical Review Committee, in light of the adopted plans and policies of the town, and the general requirements of this chapter. The report, Conditional Zoning District request and any related application materials shall be forwarded to the Town Council.

(H) **ACTION BY THE PLANNING BOARD**

- (1) The Planning Board shall make a recommendation on the application to the Town Council. The Planning Board's recommendation shall include a written statement to the Town Council describing whether its recommendation is consistent with the adopted plans and policies of the Town. If the Planning Board fails to make a recommendation, the Town Council may process the request without a recommendation.
- (2) Following Planning Board review, the Planning Director shall forward the completed conditional district request and any related materials, including the Planning Board recommendation (if applicable), to the Town Council for final action.

(I) **ACTION BY TOWN COUNCIL**

- (1) Before taking action on a conditional district proposal, the Town Council shall consider the recommendation of the Planning Board (if applicable) and the Planning Director.
- (2) The Town Council shall approve, approve with conditions, or disapprove the conditional district. Any conditions of approval must be signed (or declined) by the applicant prior to the Council rendering a decision.
- (3) Concurrently with adopting, denying, or remanding any conditional district, the Town Council shall adopt a statement describing whether its action is consistent with the adopted plans

and policies of the Town and explaining why the Town Council considers the action taken to be reasonable and in the public interest. If the Council adopts a conditional district that is inconsistent with any adopted future land use map a note must be placed on the map or maps that an amendment inconsistent with the map has been adopted and that the map is deemed amended.

(J) **CONDITIONAL ZONING DISTRICT APPROVAL CRITERIA**

In connection with its legislative decision on a conditional zoning district request, the Town Council may consider factors including, but not limited to, the following:

- (1) Consistency with the adopted plans and policies of the Town;
- (2) Suitability of the subject property for uses permitted by the current versus the proposed conditional district;
- (3) Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town;
- (4) The capacity of adequate public facilities and services including schools, roads, recreation facilities wastewater treatment and water supply facilities and stormwater drainage facilities for the proposed conditional district;
- (5) It has been determined that the legal purposes for which zoning exists are not contravened;
- (6) It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare; and
- (7) It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

(K) **MASTER PLAN AND NARRATIVE CONTENTS**

- (1) At a minimum, the master plan shall designate:
 - (a) Where and which uses or groups of uses will occur.
 - (b) The proposed intensity/density of those uses.
 - (c) The general location of the internal and external network of public rights-of-way and public infrastructure.
 - (d) All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering.
 - (e) Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems.

- (2) At a minimum, the narrative shall include:
- (a) A description of the proposed development, including any phasing, development timeline and uses.
 - (b) A list of permitted and/or prohibited uses in the Conditional Zoning District.
 - (c) A description of how the proposed Conditional Zoning District will meet the Approval Criteria listed in subsection J above.
 - (d) Description of how the development will address stormwater requirements.
 - (e) Description of how the development will be served by water, sewer and electric providers.
 - (f) Dimensional standards for the development.
 - (g) Architectural standards and elevations (when possible) for residential and non-residential structures in the development.
 - (h) A list of proposed conditions for the development. At a minimum, the conditions should address permitted and/or prohibited uses, dimensional criteria, architectural standards, transportation improvements, water/sewer/electric infrastructure requirements, and any “Community Benefit Bonus Points” taken in a Wastewater Allocation request.

(L) **SITE PLAN OR MASTER PLAN AND NARRATIVE APPROVAL CRITERIA**

- (1) The Site Plan shall include and the applicant shall be responsible for successfully addressing the Approval Criteria listed in Article 7, Section 155.707 – Site Plan Review.
- (2) The master plan and narrative shall include and the applicant shall be responsible for successfully addressing the following:
 - (a) Compliance with § 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter;
 - (b) Consistency with the Clayton General Design Guidelines;
 - (c) Conformance of the proposal with the stated purpose of the requested conditional zoning district;
 - (d) Compatibility of the proposed development with the adjacent community;
 - (e) The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out;
 - (f) Compatible relationships between each component of the overall project;

- (g) Self-sufficiency of each phase of the overall project;
- (h) The fiscal impact of the proposal and the proposed financing of required improvements;
- (i) The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community; and
- (j) The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

(M) **ACTION AFTER APPROVAL**

- (1) Upon approval of a conditional zoning district by the Town Council, and on recordation of the approved master plan, the district is deemed established. Properly executed documents shall be returned to the office of the Town Clerk for recording no later than 90 days from the date of approval or the approval shall be null and void. All documents (including the approved site plan or master plan and narrative) shall be an integral part of the approved proposal.
- (2) The approved conditional district and associated site plan or master plan and narrative shall run with the land and shall be binding on the original applicant as well as any successors, assigns and heirs. The approved site plan or master plan and narrative shall be recorded in the Johnston County Register of Deeds office and the Zoning Map amended.
- (3) Approval of a conditional district rezoning and associated master plan does not constitute site plan approval or subdivision approval (if the property is to be further subdivided), except where a site plan has been submitted in place of a master plan or the master plan meets the requirements for and is approved as a preliminary plat.
- (4) Property to be further subdivided shall obtain approval in accordance with § 155.706. Where a preliminary plat has been approved, the applicant may move forward to provide construction plans and a final plat.
- (5) Property not to be further subdivided shall obtain site plan approval as set forth in § 155.707, unless a site plan is approved in conjunction with the Conditional Zoning District.
- (6) Uses which require Special Use Review under conventional zoning shall be exempt from the provisions of §155.711 Special Use Review if designated as Permitted on the approved Master Plan.
- (7) The site plan or master plan and narrative shall run with the land perpetually, or until a subsequent rezoning is approved.

(N) **TIME LAPSE BETWEEN SIMILAR APPLICATIONS**

- (1) In the event of a withdrawal of an application prior to action by the Town Council, no application may be filed requesting the same or substantively similar conditional district

contained in the withdrawn application prior to the expiration of a minimum period of six months from the withdrawal of the application.

- (2) When the Town Council has voted on a conditional district and the proposed rezoning has failed to be adopted, then the application shall be deemed to have expired.
- (3) No subsequent application requesting a conditional district for any parcel contained in an application which has expired may be made prior to the expiration of a minimum period of six months from the date of expiration.
- (4) No subsequent application requesting the same zoning category for any parcel contained in an application which has expired may be filed prior to the expiration of a minimum period of one year from the expiration.
- (5) The Town Council, by a three-fourths majority vote, may waive the time-lapse requirements of this section if the Town Council deems it to be in the public interest to do so.

(O) **APPROVED SITE PLAN OR MASTER PLAN AND NARRATIVE MODIFICATIONS**

- (1) Amendments or modifications to an approved site plan or master plan and narrative, if minor in scope, shall be approved administratively by the Planning Director. Minor modifications shall include up to 10% modifications (by area, intensity, or dwelling units) from the original approval to the approved mixture of uses (so long as the maximums stated are not exceeded), adjustments to phasing, and the realignment of internal transportation infrastructure provided connectivity is not reduced. Changes in boundaries between land uses are permitted so long as the boundary abutting outside zoning districts does not change and the boundary between areas within the conditional district does not shift more than 100' for master plans covering 20 acres or less, 200' for master plans of 20-100 acres, or 300' for master plans of greater than 100 acres. Minor modifications to the typical project details, which include but are not limited to signage, lighting, parking, amenities, and landscape requirements shall also be approved administratively by the Planning Director provided they conform to all other aspects of the approved site plan or master plan and narrative, this Chapter, and other Town policies and specifications, as appropriate. Site Plan or Master plan and narrative modifications that require the judgement of a licensed landscape architect, engineer, or architect are not minor modifications.
- (2) Major modifications include anything not identified as minor. Major modifications shall require resubmittal and reconsideration by per this Section. Major modifications shall also include any proposed revisions that are deemed by the Planning Director to be inconsistent with the adopted plans and policies of the Town, or the conditions of the district, or that would otherwise negatively impact surrounding properties in any manner exceeding the originally approved site plan or master plan and narrative.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07; Am. Ord. 2008-06-01, passed 6-2-08; Am. Ord. 2009-03-04, passed 3-2-09; Am. Ord. 2015-02-01, passed 2-2-15; Am. Ord. 2016-04-04, passed 04-04-2016; Am. Ord. 2018-07-02, adopted 07-16-2018)



Clayton Planning Board Agenda Cover Sheet

Meeting Date

December 20, 2022

Agenda Location

PUBLIC HEARINGS

Item Title

2022-158-CZM Clayton Village Center Conditional Zoning District

Presenter(s)

Ben Howell, Planning Director

Suggested Action

Other - Recommend Approval with Conditions

Strategic Priorities Alignment



☐
Think Clayton
(Administrative)



☐
Think Arts &
Culture



☐
Think
Downtown



☐
Think
Economic
Development



☒
Think Land
Use &
Housing



☐
Think
Mobility



☐
Think Parks,
Recreation
& Natural
Resources



☐
Think Public
Services &
Infrastructure

Public Hearing: Yes - Legislative

If Approved, Will Document Require Recordation? No

Does This Item Require a Communication Plan?

- ☒ Public Hearing (Required by GS)
- ☒ Newspaper Notice (Required by GS)
- ☒ Public Forum/Input Session
- ☐ E-News Distribution
- ☐ Social Media
- ☒ Special Mailing

- ☐ Public Hearing (Not Required by GS)
- ☐ Newspaper Notice (Not Required by GS)
- ☐ Press Release
- ☐ Website
- ☐ Survey
- ☐ None Required

Other/Special Instructions: Property Posting

Summary

Request to rezone approximately 12.39 acres located on US 70 Business near Wildwood Drive, from Residential-Estate (R-E) and Highway Business (B-3) Zoning Districts to a Conditional Zoning - Mixed Use (CZ-MU) District. The Conditional Zoning District would allow for up to 234 multifamily units and 5,100 square feet of commercial space, and is accompanied by a Master Plan and Master Plan Narrative.

Recommendation

Staff recommends approval of the request subject to the 14 conditions contained in the Staff Report.

Funding Source

N/A

Cost

N/A

Corresponding Documentation

[0 2022-158-CZM Clayton Village Center Staff Report](#)

[1 2022-158-CZM Clayton Village Center Application](#)

[2 2022-158-CZM Clayton Village Center Master Plan Narrative](#)

[3 2022-158-CZM Clayton Village Center Master Plan](#)

[4 2022-158-CZM Clayton Village Center Neighborhood Meeting Info](#)

[5 2022-158-CZM Clayton Village Center TIA](#)

[6 2022-158-CZM Clayton Village Center Wastewater Allocation Request](#)

[7 2022-158-CZM Clayton Village Center Signed Recommended Conditions Document](#)

[8 2022-158-CZM Clayton Village Center Staff Report Maps](#)

Meeting Timeline

Planning Board Public Comment Session - December 20, 2022

Submitted By: Ben Howell, Planning + Zoning

Reviewed By:

Ben Howell, Planning Director
Love Ott, Land Development
Specialist

Approved - Dec 12 2022
Approved - Dec 14 2022



Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Planning Board December 20, 2022

STAFF REPORT

Application Number: 2022-158-CZM

Project Name: Clayton Village Center

Tag #: 05A01013

Location: US 70 Business near Wildwood Drive

Existing Zoning District: R-E, B-3

Proposed Zoning District: CZ-MU

Applicant: Bartlett Engineering and Surveying, PC

Owner(s): Clayton Village Center LLC and Clayton Corner, LLC

Public Noticing:

- Neighborhood meeting: September 8, 2022
- Sign posted: December 8, 2022
- Letters mailed: December 8, 2022

REQUEST: Rezone the property referenced above, located on US 70 Business near Wildwood Drive, from the Residential Estate (R-E) and Highway Business (B-3) Zoning Districts to a Conditional Zoning - Mixed Use (CZ-MU) District. The Conditional Zoning District would allow for the development of 12.39 acres in accordance with the master plan to develop up to 234 multifamily units (a density of 20.65 units/acre) and 5,100 square feet of commercial space. The Conditional Zoning District is accompanied by a Master Plan and Master Plan Narrative.

SITE DATA:

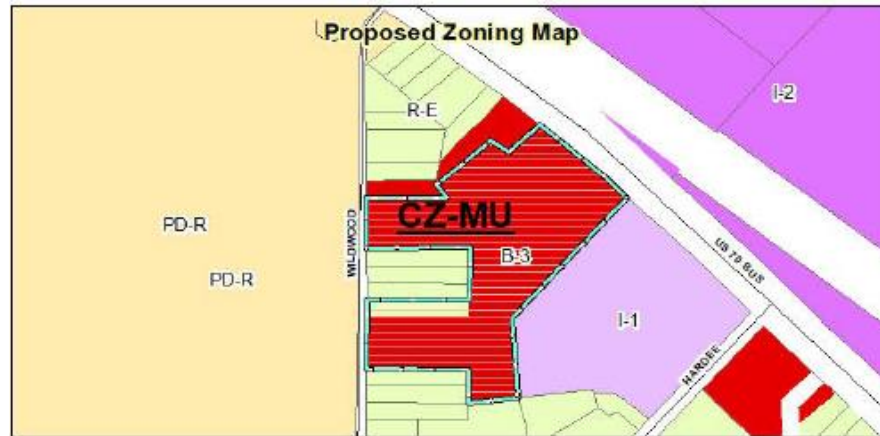
Acreage: 12.39 acres

Existing Use: Vacant



ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use(s)
North	Residential-Estate (R-E)	Existing Single-Family Residential/Vacant
South	Residential-Estate (R-E)	Existing Single-Family Residential/Vacant
East	Light Industrial (I-1)	Commercial/Flex Building
West	Planned Development - Residential (PD-R)	Single-Family Residential (Under Construction)



DEVELOPMENT DATA:

Proposed Uses:	Multi-Family and Commercial
Proposed Density:	Overall up to 234 multifamily units are proposed at an overall proposed residential density of 20.65 units/acre for the development and up to 5,100 square feet of commercial space
Fire Protection:	Town of Clayton
Access/Streets:	Access from US 70 Business and Wildwood Drive
Water/Sewer Provider:	Town of Clayton
Electric Provider:	Town of Clayton

OVERVIEW:

The applicant is requesting a Conditional Zoning District with an associated Master Plan to allow for 234 multifamily units and 5,100 square feet of commercial space on 12.39 acres, as shown on the Master Plan. The development has requested the following minimum lot dimensional standards:

Unit Type	Minimum Lot Area (SF)	Minimum Lot Width (ft)*	Maximum Lot Coverage (%)**	Maximum Impervious Surface (%)
Multi-family	N/A	N/A	N/A	65%

Unit Type	Front	Side Interior	Side Street	Rear	Maximum Height
Multi-family	25'	15"	30'	30'	50'

Encroachments into the setbacks shall be permitted as listed in UDC dated 11-15-2021.

Transportation Improvements:

The development will be accessed from US 70 Business and Wildwood Drive. The Timmons Group performed a Transportation Impact Analysis, which included an estimate of the trip generation from the development. The proposed trip generation is summarized below in the Table:

ITE Land Use Code	Independent Variable	AM Peak Hour			PM Peak Hour			Daily Traffic
		In	Out	Total	In	Out	Total	
220 – Multifamily Housing (Low-Rise)	324 Units	34	112	146	106	62	168	2,409
820 – Shopping Center	5,100 SF	95	59	154	29	31	60	795
Subtotal:		129	171	300	135	93	228	3,204
Internal Capture (1% AM, 8% PM)		-1	-2	-3	-11	-7	-18	--
		128	169	297	124	86	210	3,204
Pass-by (LUC 820: 34% PM)		--	--	--	-9	-9	-18	--
Total:		128	169	297	115	77	192	3,204

SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 10th Edition (2017)

The Transportation Impact Analysis was reviewed by the Town and NCDOT. The proposed condition 10 includes improvements recommended in the Analysis that the developer has currently agreed to construct. Condition 11 includes the Town-required improvements to Wildwood Drive, and Condition 12 requires the developer to construct any additional improvements that may be required by NCDOT as part of the Driveway Permit for the project.

Stormwater, Water, Sewer and Electricity

Stormwater

The project area is currently vacant. The proposed development will require storm water management measures for quality and quantity treatment in accordance with the Town of Clayton Stormwater Design Manual. A network of subsurface reinforced concrete pipes will convey storm water flows from impervious areas to proposed Stormwater Control Measures (SCMs). Locations for the SCMs are generally identified on the Master Plan. Exact locations and sizes will be determined at subdivision/site plan. All stormwater management will be required to meet all North Carolina Department of Environmental Quality (NCDEQ) and Town of Clayton design requirements at time of Subdivision infrastructure or Site plan submittal.

Water Service

Public water is located in the US 70 Business and Wildwood Drive Rights-of-Way. Public water will be extended to serve the development from these lines, and will be designed to meet all Town of Clayton Standards and Specifications.

Sanitary Sewer Service

In accordance with the Town's requirements, the development will be served by public utility infrastructure. There is currently a sanitary sewer gravity main and force main connecting to an existing pump station that can serve the site. The development is subject to the Town's Wastewater Allocation Policy.

Electricity

The development is proposed to be served by Town of Clayton Electric Utility, and will provide street lighting meeting the Town's requirements.

Open Space/Amenities

The proposed development will include a Pool and Clubhouse, and is proposing to preserve at least 0.57 acres of land as Resource Conservation Area.

Landscaping, Buffering and Screening:

The proposed development will provide a 15-foot-wide Type C Landscape Buffer with opaque screening, as required by the Unified Development Code, along the project boundaries. The development will also provide a thoroughfare buffer along the US 70 Business frontage, as well as street yard trees and off-street parking screening and landscaping in accordance with the UDC.

Architectural Standards

The applicant has proposed the following architectural standards, which are also included in proposed Condition 13:

- Residential and Retail:
 - Two (2) or more material types shall be used. An aesthetic and modern color scheme will be used.
 - Stone/masonry accents to be provided on a minimum of 25% of all front building façades. Stone/masonry accents will be a minimum of a 2-foot skirt under the front elevation.
- Residential:
 - All front building façades will be fiber cement siding.
 - Side and Rear elevations may be vinyl siding or fiber cement siding with colors to match front elevations.
 - Architectural-style shingles will be used
- Retail: Decorative awnings will be used on the front façade.

CONDITIONAL ZONING AND MASTER PLAN APPROVAL CRITERIA**Conditional Zoning District Approval Criteria**

See Master Plan Narrative for Applicant Responses

In connection with its legislative decision on a conditional zoning district request, the Town Council may consider factors including, but not limited to, the following:

1. Consistency with the adopted plans and policies of the Town.

Staff Commentary: The 2045 Growth Plan identifies a majority of the development site as "Employment Center," while a small portion of the site touching Wildwood Drive is classified as "Medium Density Residential." The portion of the site that is classified as "Medium Density Residential" is proposed to have 4 of the 9 multifamily buildings; according to the 2045 Growth Plan, the "Medium Density Residential area is comprised predominantly of neighborhoods with housing units that are more urban in character and in closer proximity to commercial

services and centers.” The Plan calls for a gross density of 3-5 units per acre with single family detached homes as the unit type. The rest of the development site is classified as “Employment Center” in the Plan, which “provide locations for primary employment and economic development opportunities,” with “a limited amount of supporting commercial uses.” While the multifamily portion of proposed development is not consistent with the 2045 Growth Plan, the commercial use portion is consistent, and the multifamily units may provide a transition between the medium-density residential development on the west side of Wildwood Drive and the commercial/industrial areas to the east along US 70 Business.

2. Suitability of the subject property for uses permitted by the current versus the proposed conditional district.

Staff Commentary: The property is currently zoned a mix of R-E and B-3 and is located adjacent to existing commercial services as well as near existing residential uses. The property has frontage on US 70 Business and Wildwood Drive, which will be improved by this development and a neighboring development. With the proposed conditions, staff believes the subject property may be suitable for the proposed uses and development.

3. Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town

Staff Commentary: The surrounding area is a mix of commercial and residential uses, and the proposed use is mixed-use. The proposed conditional zoning district will allow for additional suburban-style multifamily residential development and a limited amount of commercial development.

4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment and water supply facilities and stormwater drainage facilities for the proposed conditional district.

Staff Commentary: The proposed development would be served by Johnston County schools (East Clayton Elementary, Clayton Middle, Clayton High), with Clayton High School on the County’s “capped” list for 2022-2023. Access to the development will be provided US 70 Business and Wildwood Drive, with improvements recommended by the TIA included in Conditions 10, 11, and 12. The development will have approximately 0.57 acres of Resource Conservation Area, as well as a Clubhouse and Pool for amenities. The development will be required to meet the requirements in the Town’s Stormwater Ordinance. The property has access to public water along US 70 Business and Wildwood Drive and will utilize existing sewer infrastructure on the site to serve the development. Staff believes that there is adequate capacity of public services and facilities to serve the proposed development.

5. It has been determined that the legal purposes for which zoning exists are not contravened.

Staff Commentary: Staff does not believe that legal purposes for which zoning exists will be contravened by the approval of the conditional zoning district.

6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.

Staff Commentary: The proposed development will consist of multifamily development and commercial space, providing a transition from the industrial and commercial uses along US 70 east of NC 42 to the residential uses on the west side of Wildwood Drive. Improvements to the existing public road network and public utilities will mitigate impacts from the development on adjoining properties.

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

Staff Commentary: While the owners/developers may benefit from the development, staff believes that with the

proposed conditions there will be no detriment to the general public.

Master Plan Approval Criteria

The master plan shall include, and the applicant shall be responsible for successfully addressing the following:

- Compliance with § 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter;
- Consistency with the Clayton General Design Guidelines;
- Conformance of the proposal with the stated purpose of the requested conditional zoning district;
- Compatibility of the proposed development with the adjacent community;
- The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out;
- Compatible relationships between each component of the overall project;
- Self-sufficiency of each phase of the overall project;
- The fiscal impact of the proposal and the proposed financing of required improvements;
- The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community; and
- The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

Staff Commentary: The applicant has provided a Master Plan Narrative providing details of the proposal. Through the Master Plan, Narrative and proposed conditions, staff believes that the applicant has successfully met the criteria.

CONSIDERATIONS:

- The Planning Board shall make a recommendation on the application to the Town Council. The Planning Board's recommendation shall include a written statement to the Town Council describing whether its recommendation is consistent with the adopted plans and policies of the Town. If the Planning Board fails to make a recommendation, the Town Council may process the request without a recommendation.
- If approved, the conditional zoning district, master plan and narrative will be recorded with Johnston County and shall guide future development for this land. The conditional zoning district, master plan, and narrative shall not expire, and will run with the land.
- The Planning Board may recommend conditions be added or removed. The developer must agree to any imposed conditions.

RECOMMENDED CONDITIONS OF APPROVAL:

If approved, staff is recommending the following conditions of approval be placed upon the application. The applicant has reviewed the proposed conditions and is in agreement with the conditions proposed by staff.

1. Following Town Council approval, an electronic copy of the Master Plan and Narrative including the Conditions of Approval shall be submitted to the Planning Department for final approval.
2. The Development shall meet all adopted Town of Clayton Unified Development Code (UDC) requirements, Town of Clayton Engineering and Stormwater design standards, and the North Carolina Fire Code and NFPA Fire standards, except where specifically modified by the approved master plan.
3. The Development shall be constructed in substantial conformance with the Master Plan and Master Plan Narrative as approved by the Clayton Town Council.

4. The development shall be constructed in three phases, in accordance with the Master Plan.
5. Permitted uses shall be limited to the following:
 - Multifamily apartments
 - Commercial retail
 - Clubhouse/pool
 - Utility, Minor
6. The following standards will apply to the development:
 - Maximum number of Units: 234 dwelling units
 - Maximum Density: 21 DUA
 - Setbacks and Structure Height:
 - Front: 25 Feet
 - Side Interior: 15 Feet (Abutting Residential: 30 Feet)
 - Side Street: 30 Feet
 - Rear: 30 Feet
 - Maximum Building Height: 50 Feet (3 Stories)
 - Maximum Impervious Surface: 65%
7. A pool and clubhouse will be provided as amenities for the multifamily development.
8. All portions of the site shall obtain electricity from the Town of Clayton's electric utility, in accordance with the Wastewater Allocation Criteria sheet submitted by the applicant.
9. A minimum of 0.57 acres of the site is comprised of Resource Conservation Area and will be preserved as open space.
10. The following transportation improvements will be constructed and accepted by NCDOT (where necessary) prior to issuance of the first Certificate of Occupancy:
 - US 70 Business/Site Access 1: Construction of a 100-foot eastbound right-turn lane with appropriate deceleration area and taper.
 - US 70 Business/Hardee Lane: Extend eastbound U-Turn lane with full-width storage to 300 feet with appropriate deceleration area and taper.
11. The Wildwood Drive frontage (west side) of the development will be improved to match the east side improvements being completed by the Buckhorn Branch project. At a minimum, Wildwood Drive will be improved to provide a full 11-foot-wide travel lane, curb-and-gutter and sidewalk along the frontage of the development.
12. Any additional transportation improvements required as part of the NCDOT Driveway Permit will be constructed prior to issuance of the first Certificate of Occupancy.

13. The following architectural standards shall be met:

- Residential and Retail:
 - Two (2) or more material types shall be used. An aesthetic and modern color scheme will be used.
 - Stone/masonry accents to be provided on a minimum of 25% of all front building façades. Stone/masonry accents will be a minimum of a 2-foot skirt under the front elevation.
- Residential:
 - All front building façades will be fiber cement siding.
 - Side and Rear elevations may be vinyl siding or fiber cement siding with colors to match front elevations.
 - Architectural-style shingles will be used
- Retail: Decorative awnings will be used on the front façade.

14. To the extent of any conflict between the Master Plan, Master Plan Narrative and these conditions, these conditions shall control.

ATTACHMENTS:

- 1) Application
- 2) Master Plan Narrative
- 3) Master Plan
- 4) Neighborhood Meeting Information
- 5) Transportation Impact Analysis (TIA)
- 6) Wastewater Allocation Request
- 7) Recommended Conditions of Approval – Signed
- 8) Staff Report Maps



TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Coversheet

Name of Project: Clayton Village Center Date: 7/25/2022
Applicant Name: Clayton Village Center, LLC

The following checklist to be completed by applicant:

- ☒ Pre-Application Meeting on: 2/3/2021
- ☒ Review Fee
- ☒ Completed Application
- ☒ Owner's Consent Form
- ☒ Adjacent Property Owner's List
- ☒ Neighborhood Meeting Letter (one copy)
- ☒ 2 sets of stamped, addressed, empty envelopes for adjacent property owner notification
- ☒ Signed & sealed boundary survey
- ☒ Copy of signed & sealed boundary survey in PDF on USB
- ☒ Master Plan Set to include the following:
- Cover Sheet
 - Survey
 - Bubble Plan Outlining:
 - a. Where and which uses or groups of uses will occur
 - b. The proposed intensity/density of those uses
 - c. General location of internal and external network of public right-of-way and public infrastructure
 - d. All required elements for establishment of a zoning district including but not limited to dimensional standards, open space network, natural resource preservation, and landscaping or buffering

Reviewed by: _____



TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

Conditional Zoning w/Master Plan Application

Conditional Rezoning w/Associated Site Plan Fee: \$1000 + \$5.00 per acre
Advertising Fee: \$200.00

SITE INFORMATION

Name of Project: Clayton Village Center
Acreage of Property: 12.39 Zoning District: B-3 & R-E
County Tag #: 05A01013 NC Pin #: 166800-74-6900
Address/Location: Hwy 70, Clayton, NC
Existing Zoning District: B-3 & R-E Proposed Zoning District: CZ

APPLICANT INFORMATION

Applicant: Bartlett Engineering and Surveying, PC
Mailing Address: 1906 Nash Street North, Wilson, NC 27893
Phone Number: 252-399-0704 Fax: 252-399-0804
Contact Person: Steve Oliverio
Email Address: steve@bartletteng.com

PROPERTY OWNER INFORMATION

Name: Clayton Village Center, LLC & Clayton Corner, LLC (same owners)
Mailing Address: 109 Elway Drive, Clayton, NC 27527
Phone Number: (919) 333-0701 Fax: _____
Email Address: kamalcat@gmail.com

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

January 2021

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

This is a request to rezone all parcels to CZ.

APPROVAL CRITERIA – REZONING

All applications for a Conditional Rezoning must address the following Approval Criteria:

1. Consistency with the adopted plans of the Town.

This site is adjacent to a large commercial use building to the east and future residential to the west. Additional commercial uses continue along the US 70 Bus. corridor to the east and west. This application will be consistent with the plans of the Town of Clayton.

2. Suitability of the subject property for uses permitted by the current vs. the proposed conditional district.

The existing R-E zoning does not allow multi-family residential development. Transitioning the entire property to CZ will allow multi-family development with a mixed use commercial component.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.

The proposed use will compliment the surrounding area and US 70 Bus. corridor and provide an acceptable transition to the west.

4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment, water supply facilities and stormwater drainage facilities is available for the proposed conditional district.

The site is located on a major thoroughfare with access to public utilities necessary for the development. Stormwater drainage to be provided per local, state, and federal guidelines and standards.

5. It has been determined that the legal purposes for which zoning exists are not violated.

The site location along US 70 Bus. is consistent with the proposed conditional zoning setbacks. There are no zoning conditions known to conflict with this zoning request.

6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.

The proposed zoning has no negative effect on adjoining properties.

January 2021

-
7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

The proposed rezoning and development is not anticipated to negatively impact the general public. The Town of Clayton design standards and regulations will be met during the design and development process.

APPROVAL CRITERIA- MASTER PLAN

All associated Master Plans must address the following Approval Criteria:

1. Compliance with code section 155.203(L) and all other applicable requirements of this chapter, or analysis and justification if it deviates from the requirements of this chapter.

Master Plan complies with all sections of 155.203(L) except 155.203(L)(1)(i). Request no buffer between CZ and I-1 along the east of the property in compliance with 155.402. Request allowance of a 10' Class C buffer in lieu of the required 15' Class C buffer along all other property boundaries. Requested buffers shown on bubble plan.

2. Consistency with the Clayton General Design guidelines.

The development will follow the Clayton General Design guidelines as appropriate.

3. Conformance of the proposal with the stated purpose of the requested conditional zoning district.

The planned development-commercial district allows CZ. The CZ district allows multi-family and mixed use developments. The plans submitted conform to these requirements.

4. Compatibility of the proposed development with the adjacent community.

The mixed use and multi-family nature of the development will provide a transition from the commercial facilities to the east of the property and the planned residential subdivision to the west of the property.

5. The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out.

The architectural design features for the entire project will be developed at the onset by a single architectural firm. This will insure a cohesive environment at full build-out.

6. Compatible relationships between each component of the overall project.

The planned commercial space will serve both the residents of the development and the community at-large. Within the residential area, the pool and visitor center will help serve the residents of the development. Additionally, the stormwater control measure will serve the entire development in limiting environmental impacts.

7. Self-sufficiency of each phase of the overall project.

Phase I must be constructed prior to the other phases as it includes the stormwater control measures. Each phase will be constructed such that sufficient parking is provided and access routes are maintained.

8. Documentation that the proposed infrastructure improvements accommodate the additional impacts caused by the development, or documentation to assure that the development, as proposed, will not overtax the existing public infrastructure systems.

Water and sewer to be provided by the Town of Clayton. The downstream sewer appears to have sufficient capacity for the portion of development tributary to the existing lift stations. The west apartment units will flow to the planned development to the west and will be served by a future lift station.

9. The fiscal impact of the proposal and the proposed financing of required improvements.

The development will increase property tax revenue and provide several jobs. The project will be financed through a combination of private investor funds and bank loans.

10. The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community.

Sidewalks are provided throughout the community to insure easy pedestrian access to all of the facilities.

11. The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

Existing wetlands run along the southeast corner of the property. The development will be planned such that no wetland impacts are anticipated.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to amend the Zoning Ordinance and change the Official Zoning Map of the Town of Clayton as requested.. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Steve Oliveira
Print Name

Steve Oliveira
Signature of Applicant

7-25-22
Date

NEIGHBORHOOD MEETING INFORMATION

Purpose:

The purpose of the Neighborhood Meeting is to inform the surrounding property owners of the nature of the proposed land use and/or development features, answer questions, respond to concerns, and solicit comments.

Meeting Date:

The neighborhood meeting must be held at least 10 days prior to the 1st scheduled public meeting date.

Meeting Time & Location:

The meeting must be held no earlier than 6:00 pm Monday through Friday, and must be held in a location generally accessible to residents within close proximity of the request. The meeting space must be able to comfortably accommodate everyone that receives an invitation.

Meeting Notice Mailing requirements:

- a. The applicant must contact all adjacent property owners via first class mailing (see sample letter).
- b. The mailing must include all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the subject property. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property.
- c. The notice must be mailed at least ten (10) calendar days but not more than twenty-five (25) days prior to the date of the Neighborhood Meeting.

Information required to be provided at the Neighborhood Meeting:

At a minimum, the following materials must be present and discussed at a Neighborhood Meeting:

- i. A copy of the project application.
- ii. A schedule of all upcoming public meetings for the application.
- iii. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
- iv. A map, drawing, or other depiction of the proposed land use change or development proposal.

Information provided to Planning Department:

Alert the Planning Department once the date, location, and time of the Neighborhood Meeting are determined.

Deliver the following items to the Planning Department at least ten (10) calendar days prior to the 1st scheduled public meeting in electronic or hard copy format:

- ☐ Adjacent Property Owner's List (aka "mailing list") *Should be submitted with original application packet*
- ☐ Copy of the letter mailed *Should be submitted with original application packet*
- ☐ Attendance Roster (aka "sign-in sheet") *Submit no later than 10 days prior to 1st public meeting date*
- ☐ Neighborhood Meeting Summary Form with minutes (see below) *Submit 10 days prior to 1st public hearing*

ADJACENT PROPERTY OWNERS LIST

Project Name: Clayton Village Center

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS
166800-64-8874	Buckhorn Branch Park Developers, LLC	341 Kilmayne Dr., Ste. 201, Cary, NC 27520
166811-75-2228	Trina Poole	405 Alexander Lane, Smithfield, NC 27577
166811-75-2316 & 166811-75-1437	Jean Jones Wheeler	PO Box 291, Clayton, NC 27528
166800-74-3849 & 166800-74-2776	Charles Evans Adams Jr.	723 Wildwood Dr, Clayton, NC 27520
166811-75-4324	John D. Hedrick	9439 US 70 Bus Hwy W, Clayton, NC 27520
166811-75-3474	Connemara Inc.	PO Box 133, Clayton, NC 27528
166811-75-2590	Ila Catherine Dean	9451 US 70 Bus Hwy W, Clayton, NC 27520
166800-85-1723	Terry H Hardee	9316 US 70 West, Clayton, NC 27527
166800-85-3685	Randal Hardee & Terry H Hardee	PO Box 634, Clayton, NC 27528
166800-84-0769	LM Avalon Center, LLC	37 W 39th St, RM 402, New York, NY 10018
166800-74-7303	Randall Hardee & Phillip Oddo	2021 Hardee Ln, Clayton NC 27520
166800-74-8298	Garrett Pope	2000 Hardee Ln, Clayton, NC 27520
166800-74-6210	Bobby Hinton Hardee	2019 Hardee Ln, Clayton, NC 27520
166800-74-2374	Bobby H Hardee & Nancy O Hardee	2019 Hardee Ln, Clayton, NC 27520
166800-74-1285	Jose Carmen Patino	1985 Government Rd, Clayton, NC 27520
166800-74-2878	Cheryl M Adams	3844 Goforth Dr, Hope Mills, NC 28348

SAMPLE NEIGHBORHOOD MEETING LETTER

(PLACE ON AGENT'S OR OWNER'S LETTERHEAD)

<Date>

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: TBD

Meeting Time: TBD

Meeting Location: TBD

Type of Application: Conditional Zoning w/ Master Plan

Project/proposal property address: Hwy 70, Clayton, NC (166800-74-6900)

Description of project/proposal: Mixed use residential and commercial.

Multi-family apartment buildings. Conditional rezoning with Master Plan.

Upcoming public meetings for this
application (Planning Board
and/or Town Council): TBD

At a minimum, the following will be available for your inspection at the Neighborhood Meeting:

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.

A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.

If you have any questions prior to or after this meeting, you may contact us at **<Insert phone number of applicant>**. You may also contact the Town of Clayton Planning Department at 919-553-5002.

Sincerely,

<Applicant>

Cc: Town of Clayton Planning Department

January 2021

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: _____

Application: _____

Location/Date: _____

NAME	ADDRESS
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January 2021

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application:

Date of Mailing:

Time of Meeting:

Location of Meeting:

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Signature:

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Please write clearly (or submit a typed summary). Use additional sheets if necessary.



Clayton Village Conditional Zoning Master Plan Narrative

Town of Clayton, North Carolina

December 7, 2022

1906 Nash Street N., Wilson, NC 27893

t: 252-399-0704 | f: 252-399-0804 | www.bartletteng.com

Table of Contents

I.	Purpose and Intent.....	1
II.	Conditional Zoning District Approval Criteria.....	1
III.	Master Plan Approval Criteria.....	3
IV.	General Information	5
V.	Master Plan Summary.....	6
VI.	Fiscal Impacts.....	6
VII.	Consistency with Plans and Codes.....	6
VIII.	Land Intensity and Design Controls.....	8
IX.	Dimensional Standards Table.....	8
X.	Landscaping and Lighting	9
XI.	Parking and Loading Requirements.....	9
XII.	Design Commitments	9
XIII.	Open Space and Amenities.....	9
XIV.	Architectural Standards	9
XV.	Natural Resources and Environmental Preservation	10
XVI.	Stormwater Management	10
XVII.	Public Facilities.....	10
XVIII.	Transportation Impact Analysis	11
XIX.	Proposed Conditions.....	12

Appendix A – Representative Elevations

Appendix B -TIA Excerpts

I. Purpose and Intent

The proposed rezoning is being submitted as a conditional zoning request. The addition of conditions to the request is intended to provide a maximum density and number of dwelling units along with defining setbacks and buffers. A rezoning is needed to amend the current zoning map and district.

A. Compatibility

The proposal is compatible with the adjacent community. It is designed to create a harmonious relationship with all surrounding uses. There are no foreseeable adverse impacts to property owners. The project is a good housing choice for the transition from the designated "Employment Center" (noted in the 2045 Comprehensive Use Plan) to the single-family residential Buckhorn Branch Project. It will provide an affordable housing choice for those working in the "Employment Center" industries.

B. Phasing

As shown on the master plan, the project is to be completed in phases. Each phase will be self-sufficient with regards to infrastructure and amenities.

II. Conditional Zoning District Approval Criteria

The Town Council may consider the following factors in its legislative decision.

A. Consistency

Consistency with adopted plans and policies of the Town.

This site is adjacent to a large commercial use building to the east and future residential to the west. Additional commercial uses continue along the US 70 Bus. corridor to the east and west. This application will be consistent with the plans of the Town of Clayton.

B. Suitability

Suitability of the subject property for uses permitted by the current versus the proposed district.

The existing R-E zoning does not allow multi-family residential development. Transitioning the entire property to CZ-MU will allow multi-family development with a mixed-use commercial component.

C. Balance of Uses and Specific Demand

Whether the proposed change tends to improve the balance of uses or meets a specific demand in the Town.

The proposed use will complement the surrounding area and US 70 Bus. corridor and provide an acceptable transition to the west. The project is a good housing choice for the transition from the designated "Employment Center" (noted in the 2045 Comprehensive Use Plan) to the single-family residential Buckhorn Branch Project. It will provide an affordable housing choice for those working in the "Employment Center" industries.

D. Public Facilities

The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment and water supply facilities, and stormwater drainage facilities for the proposed conditional district.

The site is located on a major thoroughfare with access to public utilities necessary for the development. Stormwater drainage to be provided per local, state, and federal guidelines and standards.

1. Schools

The subdivision is expected to be served by the Johnston County Public School System. Based on the JCPS School Finder, for the 2022-23 calendar year the non-capped assigned schools are East Clayton Elementary, Clayton Middle School, and West Johnston High School/Smithfield Selma High School.

2. Roads

The interior roads and parking will be private, with access points on US Hwy 70 and Wildwood Drive.

3. Recreation

The site will have its own clubhouse and pool recreation area.

4. Stormwater

In accordance with the Town's requirements, the SCMs will be designed to treat and control one inch of rainfall. Peak discharge will be controlled at or below pre-development levels for the 1-year, 2-year, 10-year, and 25-year storm events.

E. Legal Purposes

It has been determined that the legal purposes for which zoning exists are not contravened.

The site location is along US 70 Bus. is consistent with the proposed CZ-MU zoning and conditional zoning setbacks. There are no zoning conditions known to conflict with this zoning request.

F. Adverse Effects

It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.

The proposed zoning has no negative effect on adjoining properties.

G. Material Benefit

It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

The proposed rezoning and development is not anticipated to negatively impact the general public. The Town of Clayton design standards and regulations will be met during the design and development process.

III. Master Plan Approval Criteria

A. Compliance with § 155.203(L)

Compliance with § 155.203(L) and all other applicable requirements of Chapter 155, or analysis and justification if it deviates from the requirement of Chapter 155.

Master Plan complies with all sections of 155.203(L) Buffers shown on Bubble Plan.

B. Clayton General Design Guidelines

Consistency with the Clayton General Design Guidelines.

The development will follow the Clayton General Design guidelines as appropriate.

C. Conformance with Purpose

Conformance of the proposal with the stated purpose of the requested conditional zoning district.

The planned development-commercial district allows CZ-MU. The plans submitted offers a sensible transition and appears to be in line with the 2045 Comprehensive Use Plan.

D. Compatibility with Community

Compatibility of the proposed development with the adjacent community.

The project is a good housing choice for the transition from the designated "Employment Center" (noted in the 2045 Comprehensive Use Plan) to the single-family residential Buckhorn Branch Project. It will provide an affordable housing choice for those working in the "Employment Center" industries.

E. Quality

The quality of design intended for each component of the project and the ability of the overall development plan to ensure a unified, cohesive environment at full build-out.

The architectural design features for the entire project will be developed at the onset by a single architectural firm. This will ensure a cohesive environment at full build-out.

F. Compatible Relationships

Compatible relationships between each component of the overall project.

The planned commercial space will serve both the residents of the development and the community at-large. Within the residential area, the pool and visitor center will help serve the residents of the development. Additionally, the stormwater control measure will serve the entire development in limiting environmental impacts.

G. Self-sufficiency

Self-sufficiency of each phase of the overall project.

Phase I must be constructed prior to the other phases as it includes the stormwater control measures. Each phase will be constructed such that sufficient parking is provided and access routes are maintained.

Water and sewer to be provided by the Town of Clayton. The downstream sewer appears to have sufficient capacity for the portion of development tributary to the existing lift stations. The required Sewer Allocation Criteria and Request has been submitted to the Town.

H. Fiscal Impact

The fiscal impact of the proposal and the proposed financing of required improvements.

The development will increase property tax revenue and provide several jobs. The project will be financed through a combination of private investor funds and bank loans. Financing for the development will be provided by the developer.

I. Pedestrian and Bicycle Links

The success of the proposal in providing adequate pedestrian and bicycle links within the development and with the adjacent community.

Sidewalks are provided throughout the community to insure easy pedestrian access to all of the facilities.

J. Ecological Sensitivity

The effectiveness with which the proposal protects and preserves the ecologically sensitive areas within the development.

Existing wetlands run along the southeast corner of the property. The development will be planned such that no adverse wetland impacts are anticipated.

IV. General Information

A. Project Data

Project Name	Clayton Village
Applicant	Bartlett Engineering & Surveying, PC
Existing Zoning	B3 & RE
Proposed Zoning	CZ-MU
NC PIN	166800-74-6900
County Tag	05A01013
Developer	Clayton Village Center, LLC
Authorized Agent	Bartlett Engineering & Surveying, PC

B. Vicinity Map



V. Master Plan Summary

The project is located on US Hwy 70 with additional access points connecting to Wildwood Drive. The master plan for this multi-family development will not exceed 21 dwelling units per acre or 234 units.

VI. Fiscal Impacts

The proposed product will be commensurate with the existing homes on adjacent properties; therefore, it is reasonable to assert that the development will have little to no impact on the value of neighboring properties.

The development will increase property tax revenue and provide several jobs. The project will be financed through a combination of private investor funds and bank loans.

VII. Consistency with Plans and Codes

A. Zoning

The Town of Clayton's comprehensive plan designates the property as a mix of single family residential (medium density) transitioning into Employment Center zoning. The proposed use will complement the surrounding area and US 70 Bus. corridor and provide an acceptable transition to the west. The project is a good housing choice for the transition from the designated "Employment Center" (noted in the 2045 Comprehensive Use Plan) to the single-family residential Buckhorn Branch Project. It will provide an affordable housing choice for those working in the "Employment Center" industries.

B. Conditions

1. Permitted uses shall be limited to multi-family residential dwellings, clubhouse / pool area, future phase retail space, minor utility, and preserved open space.
2. The gross density shall not exceed 21 du/ac, and the maximum number of dwelling units shall not exceed 234.
3. A minimum of 0.57 acres of the site will be comprised of resource conservation area.
4. Setbacks:
Front – 25'
Side Interior – 15' (abutting residential – 30')
Side Street – 30'
Rear – 30'
Max. Bldg. Ht. 50' (3-stories)

C. Permitted Uses

1. Multi Family / Commercial Retail
2. Clubhouse/ Pool
3. Utility, Minor

D. Wastewater Allocation Points

Category	Points	Description
DEVELOPMENT TYPE	25	Infill Development- Utilities already exist within 300 Feet of property
FUTURE TAX STATUS	5	Residential
COMMUNITY BENEFIT BONUS POINTS-1	20	Town Electric Customer
COMMUNITY BENEFIT BONUS POINTS-2	10	Additional amenities included- Pool (5 points) and Clubhouse (5 points)
COMMUNITY BENEFIT BONUS POINTS-3	5	Job Creation - 10 to 25 new jobs
COMMUNITY BENEFIT BONUS POINTS-4	10	Masonry Elements included in Building Construction- Brick and Stone used in the Front Facade of the Building (25% min. on all front bldg. facades)
Total Points	75	

VIII. Land Intensity and Design Controls

The proposed development is multi-family residential and commercial retail, and the maximum density is less than 21 dwelling units per acre.

IX. Dimensional Standards Table

Unit Type	Minimum Lot Area (SF)	Minimum Lot Width (ft)*	Maximum Lot Coverage (%)**	Maximum Impervious Surface (%)
Multi-family	N\A	N\A	N\A	65%

Unit Type	Front	Side Interior	Side Street	Rear	Maximum Height
Multi-family	25'	15"	30'	30'	50'

Encroachments into the setbacks shall be permitted as listed in UDC dated 11-15-2021.

X. Landscaping and Lighting

Landscaping and lighting elements will meet Town standards unless otherwise noted and approved by the Town Council.

A 15'-foot-wide Type C Landscape Buffer to be provided along the Development boundary, along with a Thoroughfare Street Yard Buffer along the frontage of the future retail use, as shown on the Bubble Plan. The Type C Landscape Buffer shall include a minimum 6-foot-high opaque screening (at installation) consisting of a wall, fence, berm, evergreen hedge, or combination thereof.

Street yard trees will be provided as required by the UDC.

Electric Service for the development will be served by Town of Clayton. Street lighting in the subdivision will meet the Town standards.

XI. Parking and Loading Requirements

Parking and loading will meet Town standards unless otherwise noted and approved by the Town Council.

A mailbox kiosk/CBU will be provided within the proposed clubhouse as approved by the USPS and the Town of Clayton.

XII. Design Commitments

The development will meet the standards outlined in the Design Guidelines dated February 20, 2006, unless otherwise noted and approved by the Town Council.

XIII. Open Space and Amenities

The following amenities will be included in the development:

- ▶ Pool
- ▶ Clubhouse

XIV. Architectural Standards

Superior architectural standards shall be use throughout the development with aesthetic and modern façade designs incorporated in the apartment, clubhouse and retail buildings, Appendix A depicts representative Apartment Elevations (A1), Clubhouse Elevations (A2), and Retail Elevations (A3). Some salient features include:

- Residential and Retail: 2 or more material types shall be used. An aesthetic and modern color scheme will be used.
- Residential: All front building facades to be fiber cement siding. Side and rear elevations may be vinyl siding or fiber cement siding with colors to match front elevations.
- Residential and Retail: Stone/masonry accents to be provided on a minimum of 25% of all front building facades. Stone/masonry accents will be a minimum of a 2' skirt under the front elevation.
- Residential: Architectural style shingles to be used.
- Retail: Decorative awnings to be used on front façade.

XV. Natural Resources and Environmental Preservation

Areas of floodplain, riparian buffers, streams, wetlands will be protected as resource conservation areas (RCA) as part of this development.

XVI. Stormwater Management

The proposed development lies within the Neuse River Basin. The site is subject to Neuse River Basin nutrient requirements and is subject to meet local requirements in the Town of Clayton stormwater ordinance in place at the time of preliminary plat submittal. The following requirements apply to the subject site:

- ▶ Stormwater systems shall be designed in accordance with the NCDEQ Design Manual.
- ▶ Stormwater systems shall be designed to control and treat the runoff generated from 1-inch of precipitation. The measure shall discharge the storage volume at a rate equal or less than the pre-development discharge rate for the 1-year, 24-hour storm. Stormwater flows from the development shall not be erosive nor contribute to the degradation of waterways of the State.
- ▶ System will control post-development stormwater runoff rates so that there is no increase in peak flow rates from the pre-development condition for the 1-year, 2-year, 10-year, and 25-year 24-hour duration storm events at the watershed level at each point of discharge.
- ▶ Nitrogen loads from the proposed development shall not exceed 3.6 lbs/ac/year as part of the Neuse River Basin rules or "runoff volume match" (runoff volume post-development shall not be more than 10% higher than the annual runoff volume pre-development)
- ▶ All stormwater control measures (SCMs) used to meet these requirements shall be designed to have a minimum of 85% average annual removal for Total Suspended Solids (TSS).
- ▶ All proposed SCMs shall be designed per NCDEQ minimum design criteria in order to achieve at least 85% reduction of total suspended solid export. The proposed impervious area will be captured to the maximum extent practicable and shall be diverted to the proposed SCMs for treatment.

XVII. Public Facilities

Having discussed the proposal with the Town's Engineering Department, we understand that adequate public facilities and infrastructure are available or will become available as improvements for the project.

A. Water and Sewer Infrastructure

The development will be served by public water and sanitary sewer utility systems. The utilities shall be designed to conform with the Town of Clayton standards and

specifications. Potable water from Johnston County's water system exists along US Hwy 70 and Wildwood Drive and will be extended through the development. The proposed development will be responsible for the installation of a sanitary sewer system that will serve up to 234 multi-family units and 5,100 SF of commercial retail. Easements will be provided for the public utilities that are installed outside of public right of way per Town of Clayton Requirements. The required Sewer Allocation Criteria and Request along with the current pump station analysis have been submitted to the Town.

B. Multimodal Connections

1. Pedestrian Sidewalks

A required 5' sidewalk will be installed along Wildwood Drive frontage.

XVIII. Transportation Impact Analysis

Based on the Final TIA prepared by Timmons Group, dated December 2021, the following improvements will be required of the development:

A. US-70 Business/Site Access 1

- ▶ Construction of a 100-foot eastbound right turn lane with appropriate taper.

B. US-70 Business/Hardee Lane

- ▶ Extend eastbound U-turn Lane full width storage to 300' with appropriate taper.

XIX Proposed Conditions

A. Transportation Improvements as per TIA and NCDOT

- ▶ US-70 Business/Site Access 1: Construction of a 100-foot eastbound right turn lane with appropriate taper.
- ▶ US-70 Business/Hardee Lane: Extend eastbound U-turn Lane full width storage to 300' with appropriate taper.
- ▶ Driveway and Encroachment Permits will be processed through NCDOT.
- ▶ Development to install any improvements required by NCDOT and in accordance with the T.I.A.

B. Architectural Standards

- ▶ Residential and Retail: 2 or more material types shall be used. An aesthetic and modern color scheme will be used.
- ▶ Residential: All front building facades to be fiber cement siding. Side and rear elevations may be vinyl siding or fiber cement siding with colors to match front elevations.
- ▶ Residential and Retail: Stone/masonry accents to be provided on a minimum of 25% of all front building facades. Stone/masonry accents will be a minimum of a 2' skirt under the front elevation.
- ▶ Residential: Architectural style shingles to be used.
- ▶ Retail: Decorative awnings to be used on front façade.

C. Permitted Use, Density, and Amenities

- ▶ Permitted uses shall be limited to multi-family residential dwellings, clubhouse / pool area, future phase retail space, minor utility, and preserved open space.
- ▶ The gross density shall not exceed 21 du/ac, and the maximum number dwelling units shall not exceed 234.
- ▶ Amenities included are a Pool and Clubhouse.

D. Resource Conservation, Landscape, Buffers, Setbacks, and Structure Height

- ▶ A minimum of 0.57 acres of the site will be comprised of resource conservation area.
- ▶ Setbacks and Structure Height:
 - Front – 25'
 - Side Interior – 15' (abutting residential – 30')
 - Side Street – 30'
 - Rear – 30'
 - Max. Bldg. Ht. 50' (3-stories)

Appendix A Representative Elevations

A1. Representative Apartment Elevations



Typical Apartment Elevation

A2. Representative Clubhouse Elevations



Clubhouse Elevation

A3. Representative Retail Elevations



6 CONCLUSIONS AND RECOMMENDATIONS

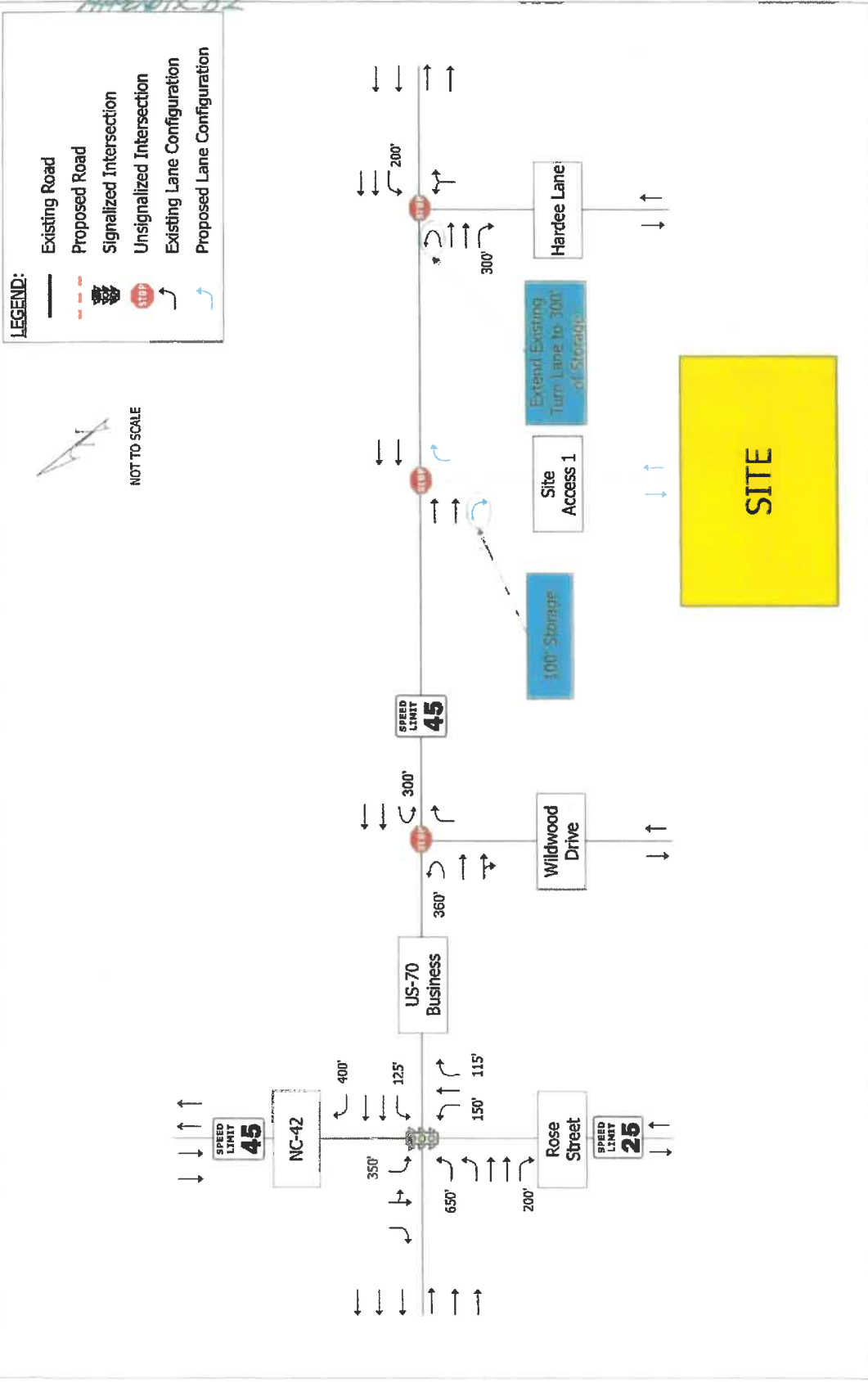
Capacity analyses were performed for the following scenarios:

- 2021 Existing traffic volumes;
- 2025 Background traffic volumes; and
- 2025 Build traffic volumes (Background + site trips).

Based on the trips generated by the subject development, the following improvements (see **Figure 6-1**) in conjunction with the construction of the proposed development:

- US-70 Business / Site Access 1
 - Construction of a 100-foot eastbound right-turn lane (with appropriate taper)
- US-70 Business / Hardee Lane
 - Extend eastbound U-turn lane full width storage to 300' (with appropriate taper)

Appendix B.2



Clayton Village Center
Traffic Impact Analysis
 2025 Proposed Lane Configuration

Figure 6-1



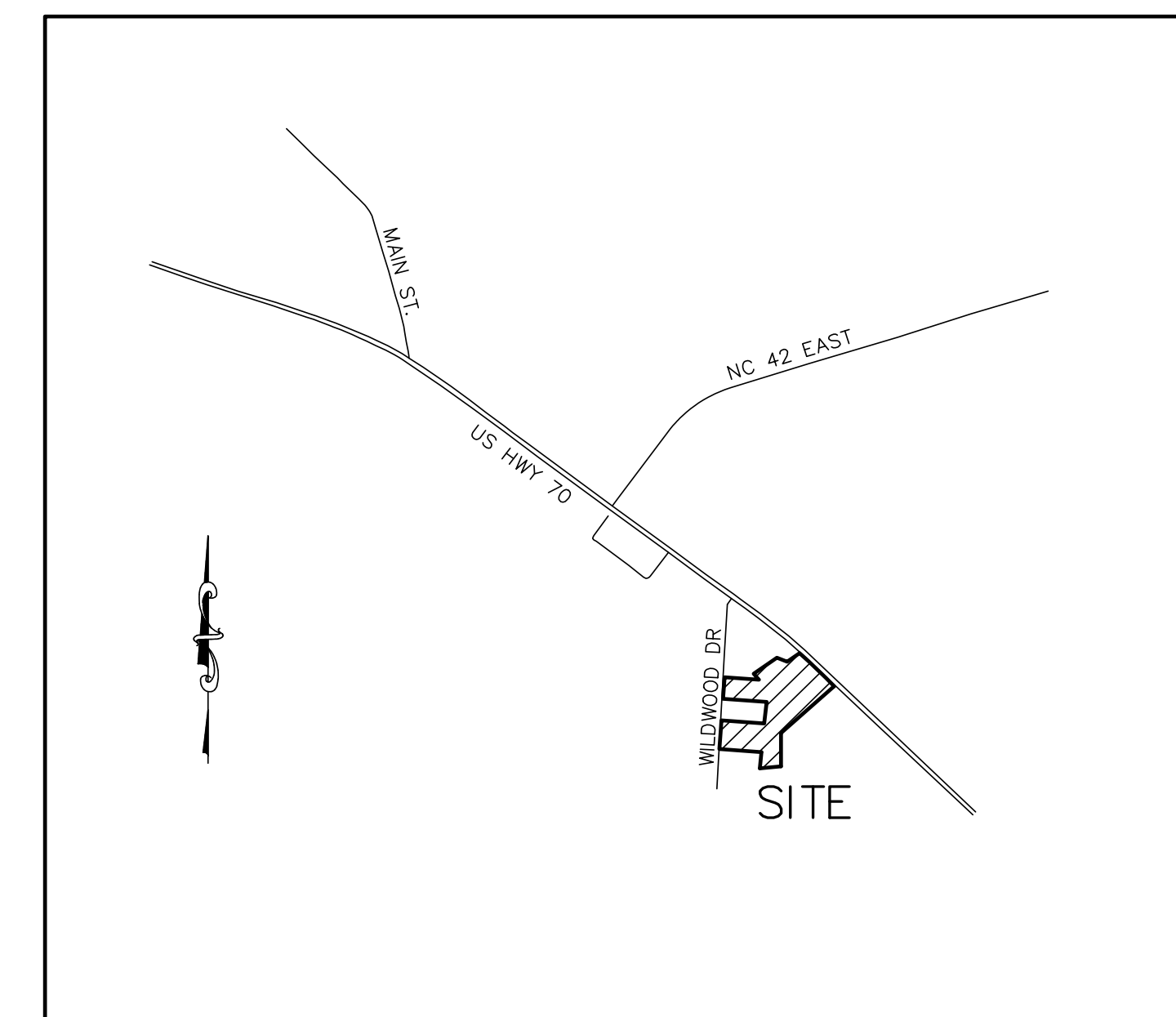
*MASTER PLAN
FOR
CLAYTON VILLAGE CENTER
2022-158-CZM
US Highway 70
Town of Clayton
Johnston County, North Carolina
November 2022*

DEVELOPER:
CLAYTON VILLAGE CENTER, LLC
109 ELWAY DRIVE
CLAYTON, NC 27527

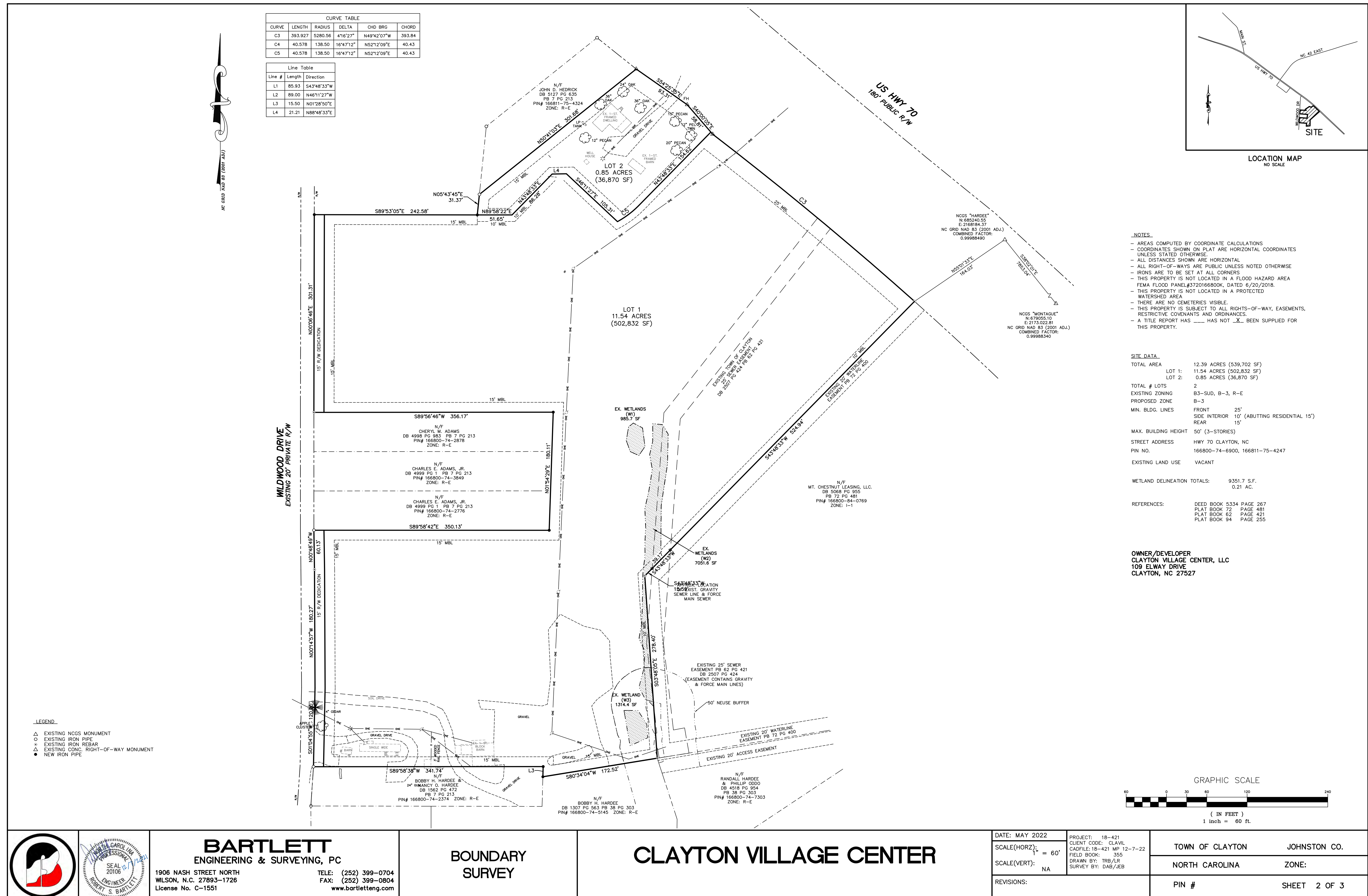
INDEX OF SHEETS

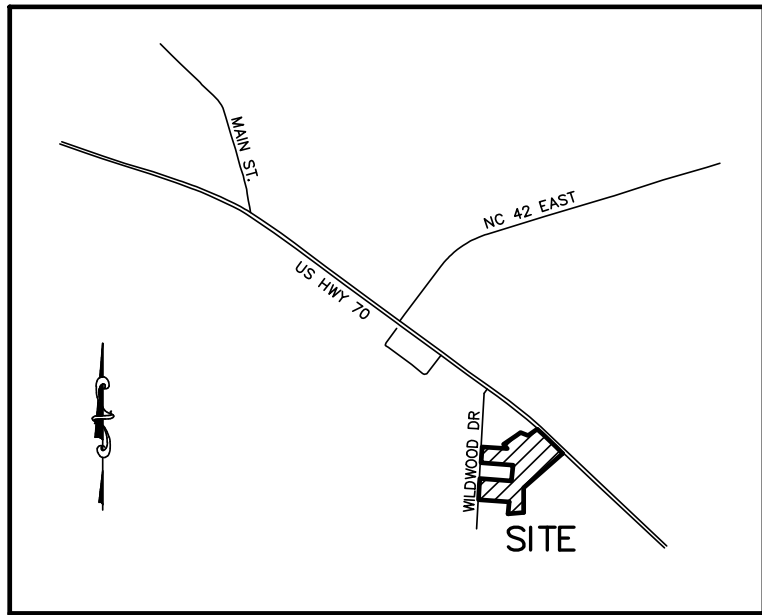
- 1 COVER SHEET
- 2 BOUNDARY SURVEY
- 3 BUBBLE PLAN

PREPARED BY:
BARTLETT ENGINEERING & SURVEYING, PC
1906 NASH STREET NORTH
WILSON, NORTH CAROLINA 27893-1726
www.bartletteng.com



LOCATION MAP
NOT TO SCALE





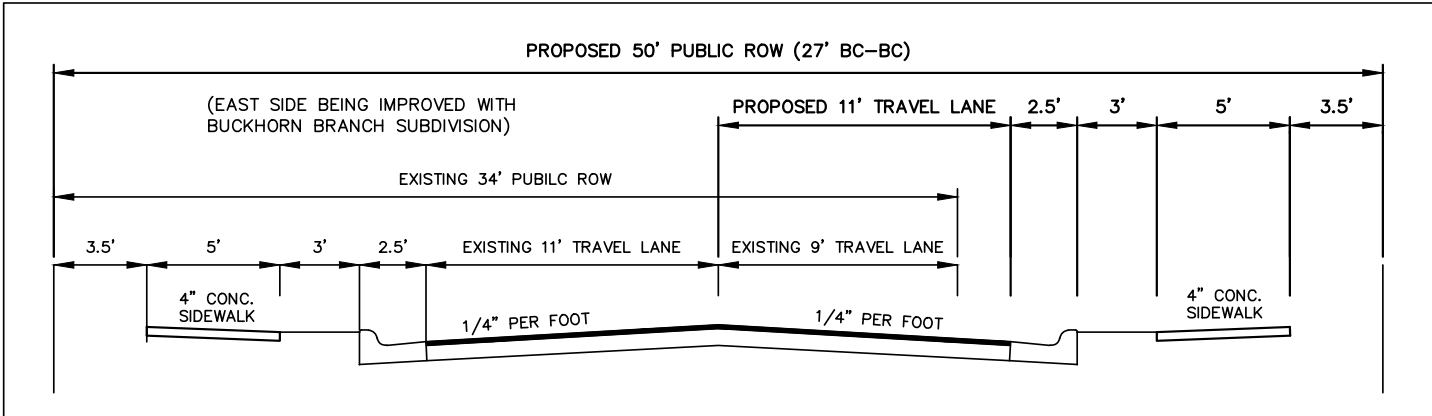
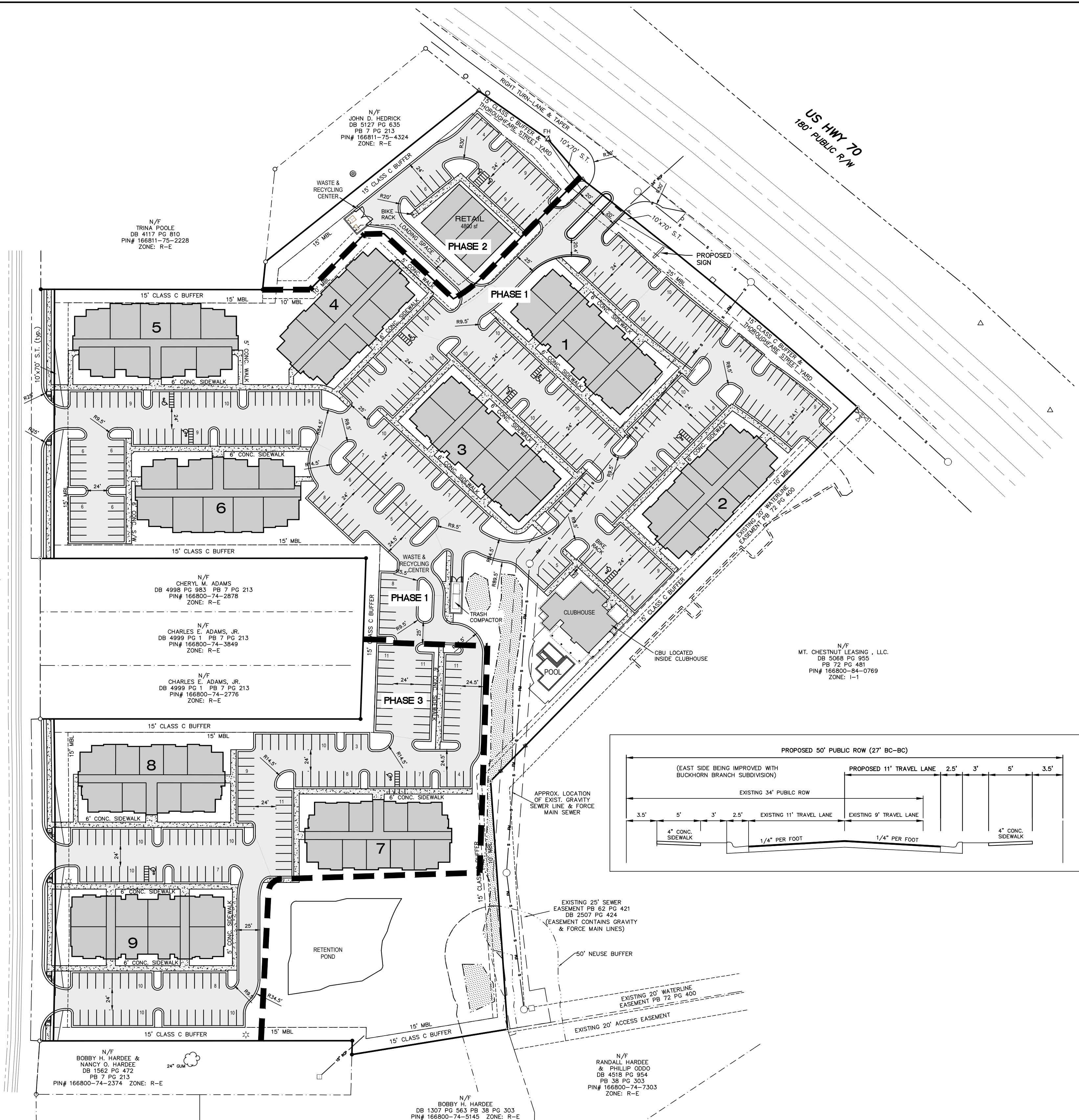
LOCATION MAP
NO SCALE



NC GRID NAD 83 (2011 AD)

WILLOW DRIVE
PROPOSED 50' PUBLIC R/W
(EAST SIDE BEING IMPROVED WITH
BUCKHORN BRANCH SUBDIVISION)

- LEGEND**
- △ EXISTING NCGS MONUMENT
 - EXISTING IRON PIPE
 - EXISTING IRON REBAR
 - △ EXISTING CONC. RIGHT-OF-WAY MONUMENT
 - EXISTING HYDRANT
 - EXISTING WATER METER
 - EXISTING WATER VALVE
 - EXISTING LIGHT POLE
 - EXISTING TRAFFIC SIGNAL POLE/UTILITY POLE
 - EXISTING GUY WIRE
 - EXISTING BORE HOLES
 - EXISTING DROP INLET
 - EXISTING SANITARY SEWER MANHOLE
 - EXISTING SANITARY SEWER CLEANOUT
 - EXISTING TREE
 - PROPOSED CANOPY TREE
 - PROPOSED BUSH
- LINE LEGEND**
- ONE — EXISTING OVERHEAD ELECTRIC (APPROX. LOCATION)
 - W — EXISTING WATER LINE (APPROX. LOCATION)
 - S — EXISTING STORM DRAIN LINE (APPROX. LOCATION)
 - S — EXISTING SANITARY SEWER LINE (APPROX. LOCATION)
 - S — EXISTING RIGHT-OF-WAY LINE (APPROX. LOCATION)
 - EXISTING PROPERTY LINE (APPROX. LOCATION - NOT SURVEYED)



NOTES:

PERMETER OF PROPERTY SHALL BE A TYPE "C" LANDSCAPE BUFFER.

NCDOT DRIVEWAY AND ENCROACHMENT PERMITS WILL BE REQUIRED FOR US HWY 70 & WILLOW DRIVE.

MAIL KIOSK TO BE LOCATED INSIDE CLUBHOUSE.

SITE DATA

DEVELOPMENT NAME:	CLAYTON VILLAGE CENTER
TOTAL AREA IN TRACT:	12.39 ACRES (539,702 SF)
LOT 1:	11.54 ACRES (502,832 SF)
LOT 2:	0.85 ACRES (36,870 SF)

PROPERTY LOCATED IN TOWN LIMITS: YES

TOTAL # LOTS: 2

EXISTING ZONING: B-3 (SUD)

PROPOSED ZONING: B-3

EXISTING LAND USE: VACANT

PROPOSED LAND USE: COMMERCIAL/RESIDENTIAL

MAXIMUM LOT IMPERVIOUS: 75%

RESOURCE CONSERVATION AREA: N/A

WATER SYSTEM OWNER: TOWN OF CLAYTON

SEWER SYSTEM OWNER: TOWN OF CLAYTON

ELECTRICAL PROVIDER: TOWN OF CLAYTON

STREET ADDRESS: HWY 70 CLAYTON, NC

PIN NO.: 166800-74-6900, 166811-75-4247

WETLAND DELINEATION TOTALS: 9,352 S.F.

RESOURCE CONSERVATION AREA: 24,878 (±) S.F. (0.57 AC) (PB 5334, PG 267)

	EXISTING	PROPOSED LOT 1	PROPOSED LOT 2
RESIDENTIAL UNITS/ACRE:	0	20.65	0
COMMERCIAL INTENSITY (GFA)*	0	0	5,100 SF
BUILDING COVERAGE:	0	22% (110,273 SF)	14% (5,100 SF)
PERVIOUS AREA:	100%	40%	40%
IMPERVIOUS AREA:	0	63% (317,121)	56% (20,467)
MIN. BLDG. LINES:	FRONT 25'		
	SIDE INTERIOR 15' (ABUTTING RESIDENTIAL 30')		
	SIDE STREET 30'		
	REAR 30' (ABUTTING RESIDENTIAL 30')		
MAX. BUILDING HEIGHT:	50' (3-STORIES)		

RESIDENTIAL PARKING REQUIRED:

SITE DATA TABLE										11.2.2020
Bldg. #	Bldg. Type / Qty.	1 BR Units	Required Parking	2 BR Units	Required Parking	3 BR Units	Required Parking	Total Units	Visitor Parking	Total Parking
1	3	0	0	24	48	0	0	24		48
2	1	15	15	6	12	6	12	27		39
3	3	0	0	24	48	0	0	24		48
4	1	15	15	6	12	6	12	27		39
5	2	0	0	27	54	0	0	27		54
6	2	0	0	27	54	0	0	27		54
7	1	15	15	6	12	6	12	27		39
8	1	15	15	6	12	6	12	27		39
9	3	0	0	24	48	0	0	24		48
TOTAL VISITOR PARKING=									59	
Unit Count	60			150		24		234		
% Unit Types	25.0%			64.1%		10.3%				
Total Parking Required										467,000
Total Parking Provided										467*
Site Area (Acres)										11.33
Density (Units per Acre)										20.65

COMMERCIAL PARKING REQUIRED: 1 SPACE PER 200 SQ FT
5100 SQ = 26 SPACES

COMMERCIAL PARKING PROVIDED: 26 9x19 SPACES
2 H/C SPACES
28 TOTAL SPACES

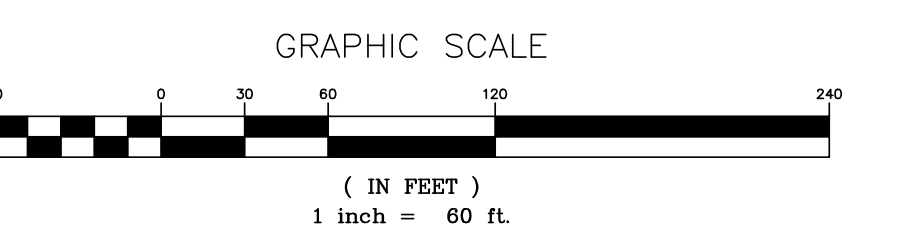
DEVELOPMENT TEAM:

OWNER: CLAYTON VILLAGE CENTER, LLC
109 ELWAY DRIVE
CLAYTON, NC 27527

DEVELOPER: CLAYTON VILLAGE CENTER, LLC
109 ELWAY DRIVE
CLAYTON, NC 27527

ENGINEER: BARTLETT ENGINEERING & SURVEYING, PC
1906 NASH STREET N
WILSON, NC 27893

ARCHITECT: PLANWORK ARCHITECTURE, P.A.
5711 SIX FORKS RD #100
RALEIGH, NC 27609



BARTLETT
ENGINEERING & SURVEYING, PC

1906 NASH STREET NORTH
WILSON, N.C. 27893-1726
License No. C-1551

TELE: (252) 399-0704
FAX: (252) 399-0804
www.bartletteng.com

BUBBLE PLAN

CLAYTON VILLAGE CENTER

DATE: SEPT. 2022	PROJECT: 18-421	TOWN OF CLAYTON	JOHNSTON CO.
SCALE(HORIZ): 1" = 60'	CLIENT CODE: CLAVIL	NORTH CAROLINA	ZONE:
SCALE(VERT): NA	CADFILE: 18-421 MP 12-7-22	PIN #	SHEET 3 OF 3
REVISIONS: 10/28/22 ADDRESS 10/17/22 COMMENTS	FIELD BOOK: 355		
12/7/22 ADDRESS TOC COMMENTS	DRAWN BY: TRB/LJR		
	SURVEY BY: DAB/JEB		

P:\0000\PROJECTS\CLAYTON VILLAGE CENTER\18-421 MP 12-7-22.dwg, Date: 07/12/2022 11:19AM EST



BARTLETT
ENGINEERING & SURVEYING, PC

1906 Nash Street North Wilson, NC 27893-1726
Phone: (252) 399-0704 Fax: (252) 399-0804
www.bartlett.us.com

August 22, 2022

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change or development proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the nature of the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: Thursday September 8, 2022, Meeting Time: 6:00PM-8:00PM

Meeting Location: Virtual via MS Teams, Meeting I.D.: 248 189 525 261 Passcode: YAdhzy
Open Microsoft Teams, click "Join with I.D.", enter the information above as prompted.

Phone-in number for attendance: 919-333-0701

Type of Application: Rezoning (B3 & RE to CZ)

Project/Proposal Property Address: 727 Wildwood Drive, Clayton, NC 27520

Target Town of Clayton Public Meeting Date: TBD

Description of Project/Proposal: Rezoning 12.39 acres of existing highway business property to provide for multi-family residential/office/commercial/retail development.

At a minimum, the following will be available for your inspection at the Neighborhood Meeting:

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. A map, drawing, or other depiction of the proposed land use change or development proposal.

A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.

If you have any questions prior to or after this meeting, you may contact us at 252-399-0704. You may also contact the Planning Department at 919-553-5002.

Sincerely,

Steve Oliverio

Project Manager

Bartlett Engineering & Surveying, PC

Cc: Town of Clayton Planning Dept.

ADJACENT PROPERTY OWNERS LIST

Project Name: Clayton Village Center

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS
166800-84-0769	LM Avalon Center, LLC	37 W. 39TH St. Rm. 402 NY, NY 10018-3888
166800-74-7303	Randell Hardee	2021 Hardee Ln., Clayton, NC 27520-9822
166800-74-7303	Phillip Oddo	2008 Hardee Ln., Clayton, NC 27520-9822
166800-74-6210	Randell Hardee	2021 Hardee Ln., Clayton, NC 27520-9822
166800-74-2374	Bobby H. & Nancy O. Hardee	2019 Hardee LN., Clayton, NC 27520-9822
166800-74-1285	Jose Carmin Patino	1985 Government Rd., Clayton, NC 27520-7479
• 166811-75-2316	^{733 Wildwood Dr.} Jean Jones Wheeler	P.O. Box 291, Clayton, NC 27528-0291
166811-75-3474	Connemaria, INC.	P.O. Box 133, Clayton, NC 27528-0000
166800-74-2776	Charles Evans Adams, JR.	723 Wildwood Dr., Clayton, NC 27520-2037
166800-74-3849	Charles Evans Adams, JR.	723 Wildwood Dr., Clayton, NC 27520-2037
166800-74-2878	Cheryl M. Adams	6007 Lolly Loop, Kileen, TX 76542-4687
166800-64-8874	Clayton Properties Group, INC.	441 Western LN., Irmo, SC 29063-9230
166811-75-2228	Trina B. Wood	405 Alexander Ln., Smithfield, NC 27577-6911
• 166811-75-4324	John D. Hendrick	9439 US 70 Bus. Hwy W., Clayton, NC 27520-9295
	JESSICA BOYNTON HEUSERICK	
	ROBERT BRIDGEMAN, RICHARD BRIDGEMAN, ABRAHAM BRIDGEMAN, JIM BRIDGEMAN	

To: LM Avalon Center, LLC
37 W. 39th St. Rm. 402
NY, NY 10018-3888

To: John D. Hendrick
9439 US 70 Bus. Hwy. W.
Clayton, NC 27520-9295

To: Randell Hardee
2021 Hardee Lane
Clayton, NC 27520-9822

To: Jean Jones Wheeler
P.O. Box 291
Clayton, NC 27528-0291

To: Phillip Oddo
2008 Hardee Lane
Clayton, NC 27520-9822

To: Connemaria, Inc.
P.O. Box 133
Clayton, NC 27528-0000

To: Bobby H. & Nancy O. Hardee
2019 Hardee Lane
Clayton, NC 27520-9822

To: Cheryl M. Adams
6007 Lolly Loop
Kileen, TX 76542-4687

To: Jose Carmin Patino
1985 Government Road
Clayton, NC 27520-7479

To: Clayton Properties Group, Inc.
441 Western Ln.
Irmo, SC 29063-9230

To: Charles E. & Cheryl M. Adams
723 Wildwood Drive
Clayton, NC 27520-2037

To: Trina B. Wood
405 Alexander Lane
Smithfield, NC 27577-6911

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: CLAYTON VILLAGE CENTER

Application: REZONING

Location/Date: VIRTUAL - THURSDAY SEPT. 8, 2022 6pm-8pm

	NAME	ADDRESS
1	JOHN + JESSICA HENDRICK	9439 US 70 BUS. HWY W.
2	Jacqueline & Angie on behalf of Jean Jones Kitterline	-733 Whitewood Dr.
3	Steve Oliverio - Host	BRETHERTON ENGINEERING & SURVEYING, PC
4	Robert Bretter	BRETHERTON ENGINEERING & SURVEYING, PC
5	RWUDET	DEVELOPER TEAM
6	Abdul	" "
7	Jim Pedercone	" "
8		
9		
10		
11		
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NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: REZONING - CLAYTON VILLAGE CENTER
Date of Mailing: 8-19-22
Date of Meeting: 9-8-22 Time of Meeting: 6pm - 8pm
Location of Meeting: VIRTUAL

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting, and that all required information was presented at the Meeting:

Printed Name: Steve Oliverio Signature: Steve Oliverio 9-8-22

Meeting Summary/Minutes: provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.

- RECEIVED A PHONE CALL FROM CHERL M. ADAMS ON 9-7-22 @ 2pm - 723 WILLOWDALE. SHE SIMPLY HAD GENERAL PROJECT QUESTIONS & QUESTIONS RE: THE VIRTUAL MEETING.
- JOHN & JESSICA HENDRICK - CONCERN OVER COMMON PL & WANT ASSURANCE THAT NONE OF THEIR UTILITY SERVICES WOULD BE AFFECTED. WE OFFERED THAT THE PL WILL BE SURVEYED TO BE SURE NO UTILITIES ARE AFFECTED. OTHER ITEMS DISCUSSED WERE BUFFERS, LIGHTING, PHASE LINES, DECK, REPAIRS, RETAIL BUILDING & POSSIBLE USES AND PROPOSED "LEVEL" OF APARTMENTS (TARGETING MED. TO HIGH INCOME RESIDENTS (NOT LOW OR SECTION 8)).
- JACQUELINE & ANJIE PROPOSED A FEW QUESTIONS RE: ACCESS & IMPROVEMENTS TO US HWY 70. WE REPLIED NONE OF THEIR EXISTING ACCESS WOULD BE AFFECTED AND THAT A RIGHT TURN LANE IN IS REQ'D @ US HWY 70, AND THAT ACCESS POINT IS RIGHT OUT ONLY. MY PHONE # & EMAIL WERE PROVIDED IF ADDITIONAL QUESTIONS ARISE.

Clayton Village Center

Traffic Impact Analysis

Clayton, North Carolina

December 2021



Prepared for:

12/15/21

**Bartlett Engineering &
Surveying, PC**

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Contact: Jeff Hochenadel, PE, PTOE

5410 Trinity Road, Suite 102 • Raleigh, NC 27607
(919) 866-4951 phone • (919) 859-5663 fax
www.timmons.com

TABLE OF CONTENTS

TABLE OF CONTENTS.....	I
LIST OF TABLES.....	II
LIST OF FIGURES	II
APPENDICES	III
1 INTRODUCTION	1-1
2 EXISTING INFORMATION.....	2-1
2.1 STUDY LIMITS	2-1
2.2 EXISTING ROADWAYS	2-1
2.3 EXISTING INTERSECTIONS.....	2-1
2.4 TRAFFIC VOLUMES	2-2
2.5 CAPACITY ANALYSIS	2-2
3 EXISTING AND BACKGROUND CONDITIONS AND ANALYSIS.....	3-1
3.1 2021 EXISTING ANALYSES.....	3-1
3.2 2025 BACKGROUND TRAFFIC VOLUMES.....	3-3
3.3 2025 BACKGROUND TRAFFIC ANALYSIS	3-3
4 SITE TRIP GENERATION AND DISTRIBUTION	4-1
4.1 TRIP GENERATION.....	4-1
4.2 TRIP DISTRIBUTION.....	4-1
5 2025 BUILD CONDITION AND ANALYSIS.....	5-1
5.1 2025 BUILD TRAFFIC VOLUMES.....	5-1
5.2 2025 BUILD ANALYSIS.....	5-1
6 CONCLUSIONS AND RECOMMENDATIONS.....	6-1

LIST OF TABLES

TABLE 2-1: LEVEL OF SERVICE DEFINITIONS	2-3
TABLE 2-2: SIGNALIZED AND UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA.....	2-4
TABLE 3-1: INTERSECTION LEVEL OF SERVICE, AND DELAY SUMMARY	
2021 EXISTING TRAFFIC VOLUMES	3-2
TABLE 3-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY	
2025 BACKGROUND TRAFFIC VOLUMES	3-5
TABLE 4-1: TRIP GENERATION SUMMARY	4-1
TABLE 5-1: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY	
2025 BUILD TRAFFIC VOLUMES	5-2
TABLE 5-2: INTERSECTION LEVEL OF SERVICE AND DELAY SUMMARY	
2025 BUILD TRAFFIC VOLUMES WITH RECOMMENDED IMPROVEMENTS.....	5-4

LIST OF FIGURES

FIGURE 1-1: SITE LOCATION MAP
FIGURE 2-1: PRELIMINARY SITE LAYOUT
FIGURE 2-2: 2021 EXISTING LANE CONFIGURATION
FIGURE 2-3: 2021 EXISTING TRAFFIC VOLUMES
FIGURE 3-1: 2025 AMBIENT TRAFFIC VOLUMES
FIGURE 3-2: 2025 APPROVED DEVELOPMENT TRAFFIC VOLUMES
FIGURE 3-3: 2025 BACKGROUND TRAFFIC VOLUMES
FIGURE 4-1: TRIP DISTRIBUTION PERCENTAGES
FIGURE 4-2: TRIP DISTRIBUTION VOLUMES
FIGURE 4-3: 2025 PASS-BY DISTRIBUTION PERCENTAGES
FIGURE 4-4: 2025 PASS-BY DISTRIBUTION VOLUMES
FIGURE 4-5: 2025 TOTAL TRIP DISTRIBUTION VOLUMES
FIGURE 5-1: 2025 BUILD TRAFFIC VOLUMES
FIGURE 6-1: 2025 PROPOSED LANE CONFIGURATION

APPENDICES

Appendix A – Scoping Document

Appendix B – Traffic Counts

Appendix C – Traffic Signal Plans

Appendix D – Synchro and SimTraffic Analysis Outputs

Appendix E – Approved Developments

Appendix F – NCDOT Nomograph

1 INTRODUCTION

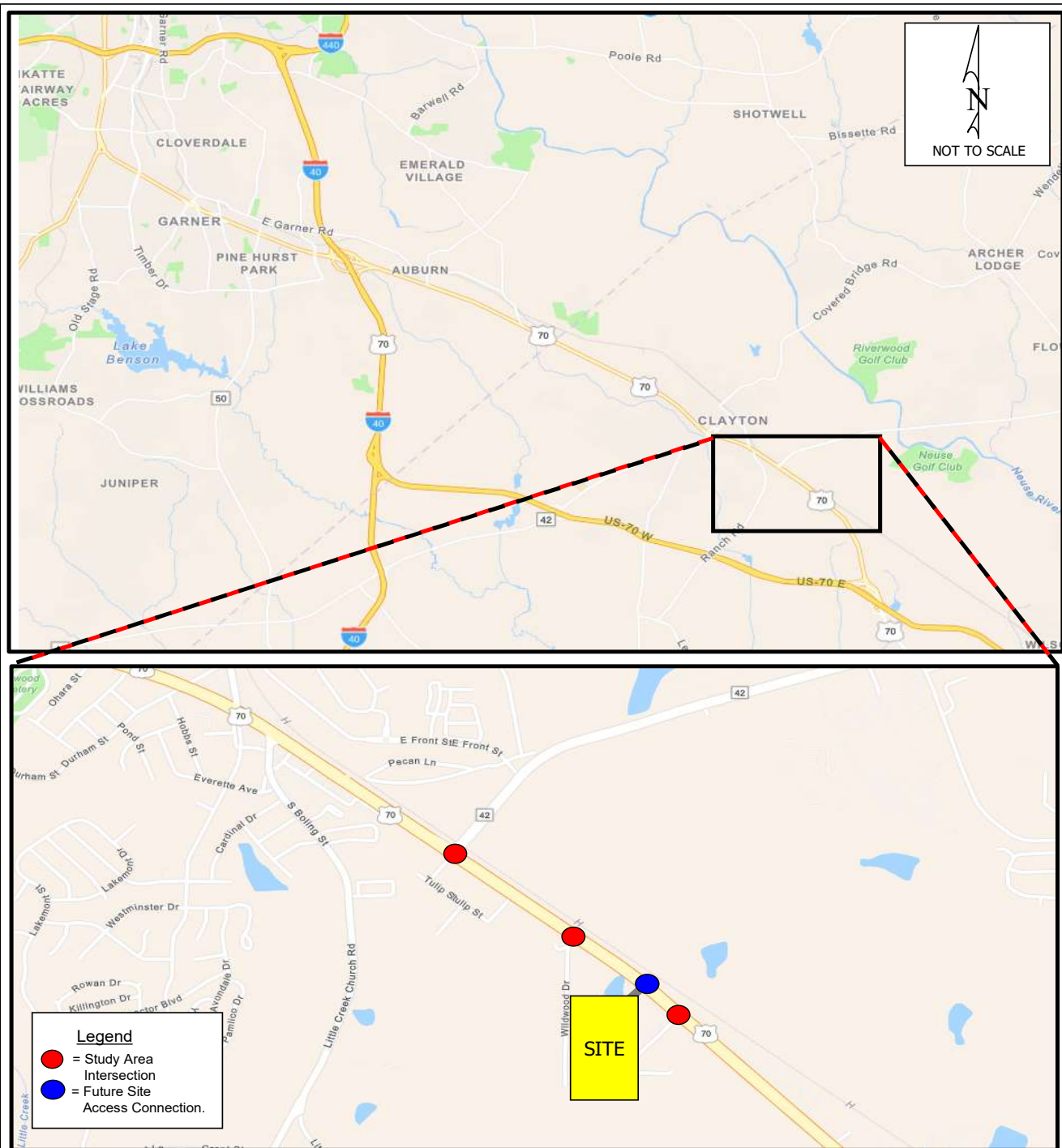
This report presents the proposed Clayton Village Center mixed-use development traffic impact analysis (TIA) findings. This TIA supersedes the Clayton Village Center originally sealed on October 30, 2019. The development will be located off US-70 Business, in Clayton, NC (see **Figure 1-1**) and will consist of 324 multifamily residential units and 5,100 square-feet (SF) of commercial space.

Analyses were completed for the 2021 Existing traffic volumes, 2025 Background traffic volumes, and 2025 Build traffic volumes. The purpose of this assessment is as follows:

1. Verify that the existing geometry provided within the study area is sufficient to accommodate the projected traffic volumes; and
2. Determine what, if any, improvements are necessary at the proposed site access connection to US-70 Business.

The following steps were taken to determine the potential traffic impacts associated with this project:

1. Data Collection – AM (7:00 – 9:00) and PM (4:00 – 6:00) peak period turning movement counts were collected in October 2021 at the following intersections:
 - US-70 Business / NC-42 / Rose Street – Signalized;
 - US-70 Business / Wildwood Drive – Unsignalized; and
 - US-70 Business / Hardee Lane – Unsignalized.
2. Trip Generation/Future Traffic – Traffic generated by the proposed development was estimated using the 10th Edition of the Institute of Transportation Engineers' *Trip Generation Manual*. Trip generation was calculated using the number of residential units (324) and proposed commercial square-footage (5,100) as the independent variable, as well as the provided equation (per NCDOT guidelines). Projected traffic volumes were calculated using a 3% ambient growth rate and traffic from two approved background development (Buckhorn Branch TIA and Glen Laurel Mixed-Use), per the direction received from the NCDOT / Town of Clayton (see scoping information in **Appendix A**).
3. Trip Distribution and Projections – The site-generated trip distribution was based on the existing area traffic distribution. It was assumed, for purposes of analysis, that projected trips would follow the same patterns as existing traffic.
4. Traffic Capacity Analysis – Level of service analyses were performed using SYNCHRO Version 10.3 for the following intersections:
 - US-70 Business / NC-42 / Rose Street;
 - US-70 Business / Wildwood Drive;
 - US-70 Business / Site Access 1; and
 - US-70 Business / Hardee Lane.
5. Queuing Analysis – The maximum and 95th percentile queue lengths were analyzed at the intersections listed above.
6. Review of Proposed Improvements – Roadway improvements proposed to accommodate projected site-generated traffic were evaluated.



2 EXISTING INFORMATION

The proposed development will be located off US-70 Business in Clayton, NC, as shown on **Figure 1-1**.

2.1 STUDY LIMITS

Access to the proposed site will be provided via one right-in/right-out (RIRO) connection to US-70 Business and one access to a private facility (not analyzed in this study). Site Access 1 is proposed to connect to US-70 Business approximately 700-feet (C/L to C/L) east of Wildwood Drive.

The preliminary site layout includes the proposed development site entrance (see **Figure 2-1**). All figures are located at the end of their respective chapter.

The study limits include the following four (4) intersections:

- US-70 Business / NC-42 / Rose Street;
- US-70 Business / Wildwood Drive;
- US-70 Business / Site Access 1; and
- US-70 Business / Hardee Lane.

2.2 EXISTING ROADWAYS

US-70 Business is a six-lane divided highway west of NC-42 and a four-lane divided highway east of NC-42. The facility runs approximately northwest / southeast and has a posted 45-mph speed limit within the study area. For purposes of this analysis, US-70 Business was considered to be an east / west route. US-70 Business provides a connection between Smithfield and Raleigh, NC. Per 2019 NCDOT Average Annual Daily Traffic (AADT) maps, US-70 Business carries 21,000 vehicles per day (VPD) east of NC-42.

NC-42 is a four-lane divided highway north of US-70 Business. The facility runs approximately northeast / southwest and has a posted 45-mph speed limit within the study area. NC-42 provides a connection between Wilson and Fuquay-Varina, NC. Per 2019 NCDOT AADT maps, NC-42 carries 24,500 VPD.

Wildwood Drive, Rose Street, and Hardee Lane are minor facilities that service area commercial and residential developments. Rose Street has a posted 25-mph speed limit. Wildwood Drive and Hardee Lane were assumed to have a 25-mph speed limit. No existing AADT data is available for these facilities.

2.3 EXISTING INTERSECTIONS

Using available aerial imagery and site visits, Timmons Group compiled the existing geometry for the study area intersections. The existing intersection geometry is shown on **Figure 2-2** and used for the existing and future analyses.

The intersection of US-70 Business / NC-42 / Rose Street is a six-phase signalized intersection with split side street phasing. The northbound intersection approach includes an exclusive left-turn lane, a single through lane, and an exclusive right-turn lane. The southbound approach includes an exclusive left-turn lane, a shared through / left-turn lane, and an exclusive right-turn lane. The eastbound approach includes dual left-turn lanes, two through lanes, and an exclusive right-turn lane. The westbound approach includes an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane.

The intersection of US-70 Business / Wildwood Drive is an unsignalized intersection with the Wildwood Drive approach encountering the stopped condition. The northbound approach consists of a single right-turn lane. The eastbound approach includes an exclusive U-turn lane, a through lane, and a shared

through / right-turn lane. The westbound approach includes an exclusive U-turn lane (no left-over access to Wildwood Drive) and two through lanes.

The intersection of US-70 Business / Hardee Lane is an unsignalized intersection with the Hardee Lane approach encountering the stopped condition. The northbound approach consists of a single shared left / right-turn lane. The eastbound approach includes an exclusive U-turn lane, two through lanes, and an exclusive right-turn lane. The westbound approach includes an exclusive left-turn lane and two through lanes.

2.4 TRAFFIC VOLUMES

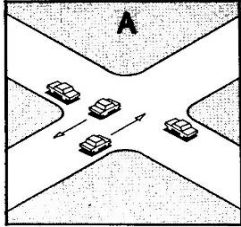
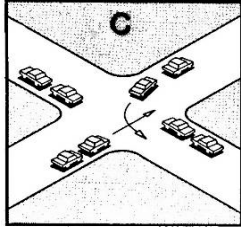
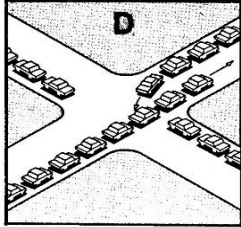
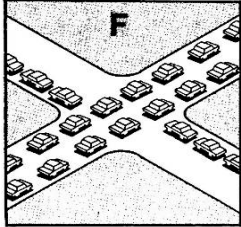
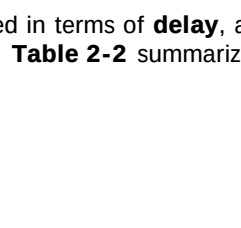
Timmons Group calculated peak hour volumes for the study area intersections using the AM (7:00 – 9:00) and PM (4:00 – 6:00) peak period turning movement counts undertaken in October 2021. Traffic count data is summarized in **Figure 2-3**. The complete traffic count data can be found in **Appendix B**.

2.5 CAPACITY ANALYSIS

Using field observations, aerial photography, and traffic count data, traffic operations were analyzed during 2021 (existing) and 2025 (without and with the proposed site trips).

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies govern how the capacity analyses are conducted and how the results are interpreted. There are six letter grades of Levels of Service (LOS) from A to F, with LOS A representing the best operating conditions and LOS F the worst operating conditions. At signalized intersections, an overall intersection LOS E is generally considered unacceptable. At unsignalized intersections, a LOS E is generally considered acceptable only if the side street encounters delay. Nevertheless, side streets typically function at a LOS F during peak traffic periods, because the traffic volumes often do not warrant a traffic signal to assist side street traffic. **Table 2-1** shows in detail how each of these levels of service are interpreted.

Table 2-1: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections	
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.	
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.	
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.	
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.	
E	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left-turning vehicles.	
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.	

SOURCE: "A Policy on Design of Design of Urban Highways and Arterial Streets" - AASHTO, 1973 based upon material published in "Highway Capacity Manual", National Academy of Sciences, 1965.

For signalized and unsignalized intersections, level of service is defined in terms of **delay**, a measure of driver discomfort, frustration, fuel consumption and lost travel time. **Table 2-2** summarizes the delay associated with each LOS category:

Table 2-2: Signalized and Unsignalized Intersection Level of Service Criteria

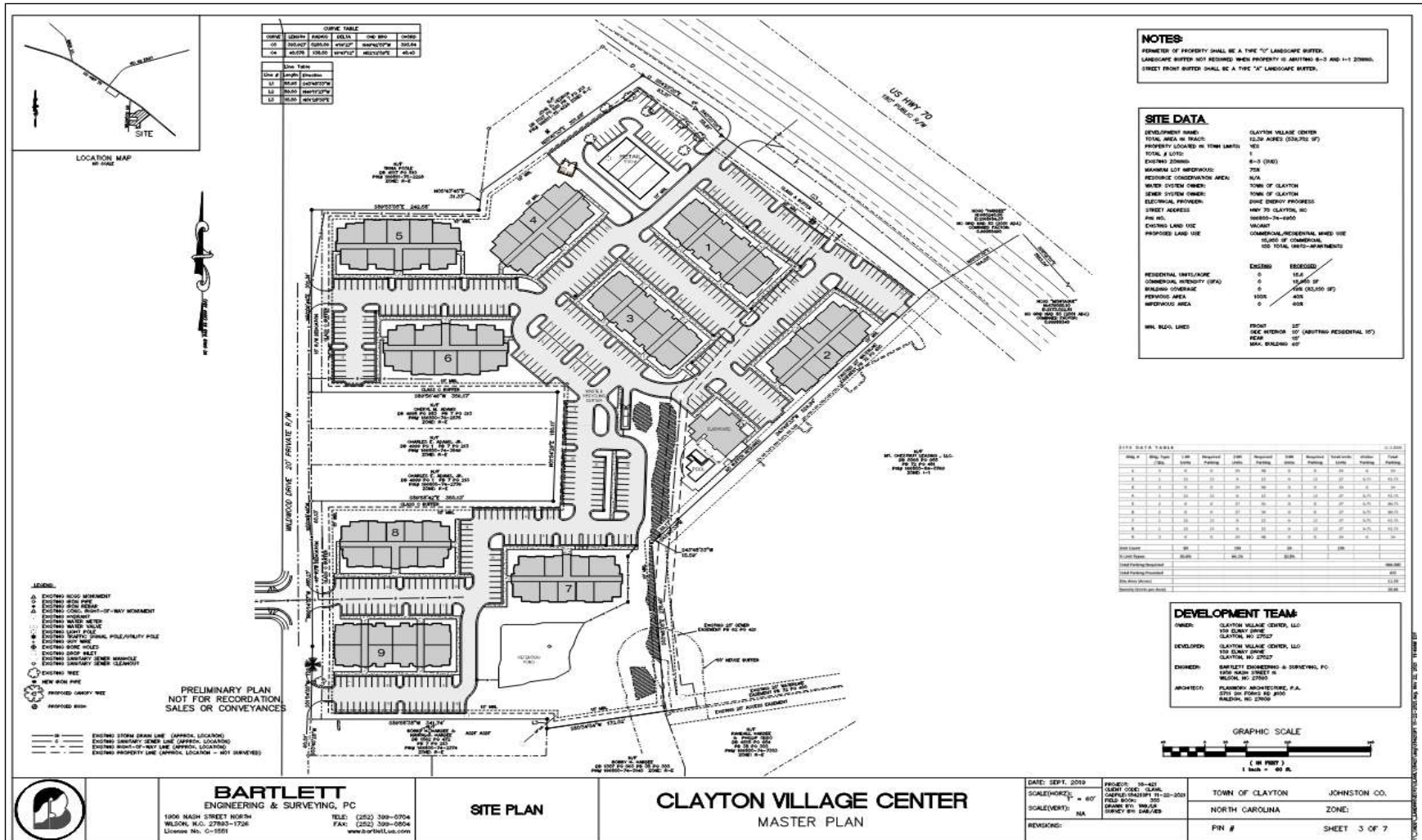
Signalized Intersections		Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤ 10	A	0 to 10
B	> 10 to ≤ 20	B	> 10 to ≤ 15
C	> 20 to ≤ 35	C	> 15 to ≤ 25
D	> 35 to ≤ 55	D	> 25 to ≤ 35
E	> 55 to ≤ 80	E	> 35 to ≤ 50
F	> 80	F	> 50

*Source: Exhibit 16-2 and Exhibit 17-2 from
TRB's "Highway Capacity Manual 2000"*

Capacity analyses were performed to assess operational conditions. Study area intersections were analyzed using SYNCHRO Version 10.3 based on Highway Capacity Manual (HCM) methodologies with the following assumptions:

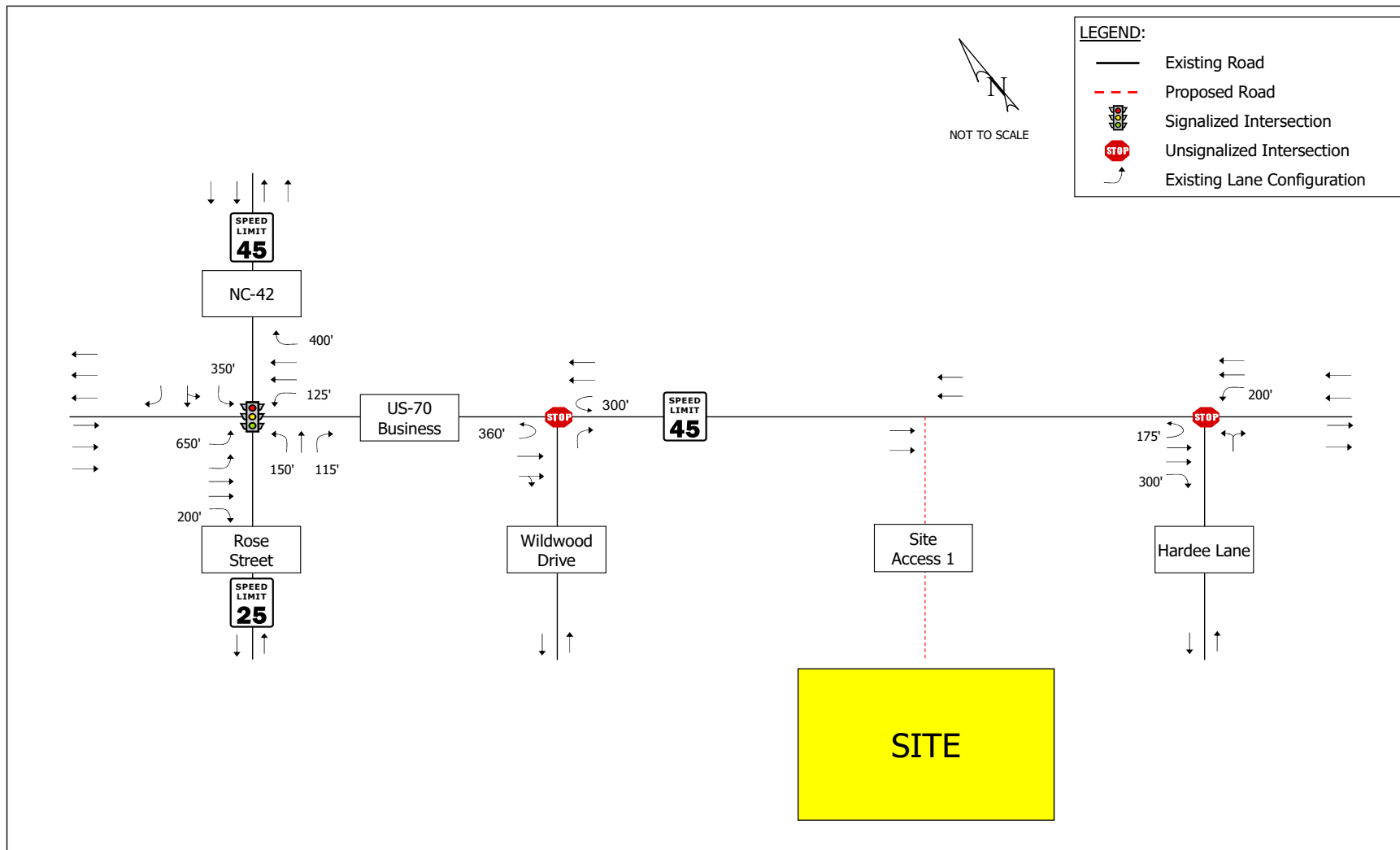
- Existing grades;
- 12-foot lane widths;
- No parking activity, bus stops, or pedestrians;
- Peak hour factor (PHF) of 0.90;
- Heavy vehicle percentages 2%; and
- Minimum turning movement volume of 4 vehicles per hour (VPH) for all allowed movements; and
- Existing traffic signal plan signal data (see **Appendix C**).

The US-70 Business / Wildwood Drive intersection is modelled as two separate intersections as a result of NCDOT modeling guidelines for reduced conflict intersections (RCIs). Therefore, the eastbound U-Turn and westbound U-Turn approaches are modelled separately.



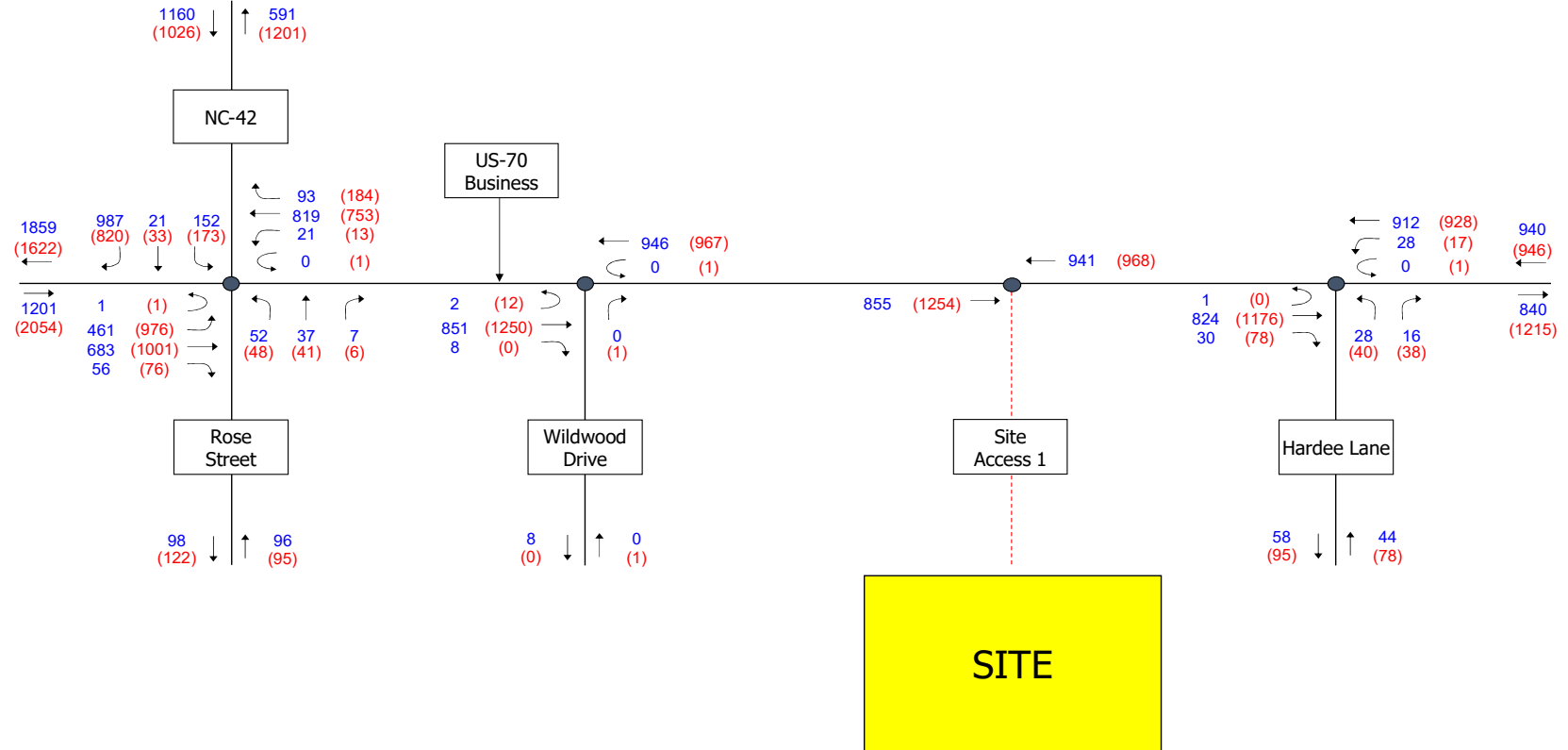
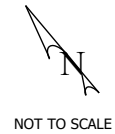
Clayton Village Center Traffic Impact Analysis Preliminary Site Plan

Figure 2-1



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis
2021 Existing Traffic Volumes**

Figure 2-3

3 EXISTING AND BACKGROUND CONDITIONS AND ANALYSIS

3.1 2021 EXISTING ANALYSES

Table 3-1 summarizes the intersection LOS, delay, and queue lengths based on the existing geometry shown in **Figure 2-2** and the 2021 Existing traffic volumes shown in **Figure 2-3**. The corresponding SYNCHRO and SimTraffic outputs are included in **Appendix D**. Note that (as mentioned in **Section 2.5**) the US-70 Business / Wildwood Drive intersection is modelled as two separate intersections; as a result, **Table 3-1** shows two results for the same intersection (Intersections 2 & 201).

The signalized intersection of US-70 Business / NC-42 / Rose Street is currently operating at an overall LOS C during both 2021 Existing peak hours. Multiple intersection movements are currently operating unacceptably during the PM peak hour. Existing turn-lane storage is adequate to handle all SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours.

All US-70 Business / Wildwood Drive unsignalized intersection movements are currently operating at a LOS C or better during both 2021 Existing peak hours. Existing turn-lane storage is adequate to handle all SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours.

The northbound US-70 Business / Hardee Lane unsignalized intersection approach is currently operating at a LOS E and LOS F during the 2021 Existing AM and PM peak hours, respectively. All other intersection movements are currently operating at a LOS C or better during both peak hours. Existing turn-lane storage is adequate to handle all SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours.

**Table 3-1: Intersection Level of Service, Delay, and Queue Summary
2021 Existing Traffic Volumes**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
1: Rose Street/NC-42 & US-70 Business	EB Dual Lefts	650	41.8	D	264	233	74.0	E	#724	646
	EB Thru		15.1	B	252	180	17.4	B	410	281
	EB Right	200	7.0	A	34	48	6.9	A	44	53
	EB Approach		25.0	C	--	--	44.0	D	--	--
	WB Left	125	53.0	D	48	95	57.1	E	38	93
	WB Thru		32.8	C	432	288	43.4	D	411	319
	WB Right	400	0.1	A	0	53	0.2	A	0	125
	WB Approach		30.0	C	--	--	35.2	D	--	--
	NB Left	150	53.1	D	92	99	59.3	E	88	92
	NB Thru		50.9	D	70	93	57.4	E	79	92
	NB Right	115	25.0	C	15	25	27.5	C	14	29
	NB Approach		50.2	D	--	--	56.4	E	--	--
	SB Left	350	50.8	D	138	146	57.3	E	161	167
	SB Left/Thru		50.7	D	141	165	57.3	E	163	194
	SB Right		2.5	A	0	--	1.5	A	0	--
	SB Approach		9.7	A	--	--	12.7	B	--	--
	Overall		21.8	C	--	--	34.5	C	--	--
2: Wildwood Drive/U-Turn 1 EB & US-70 Business	EB Thru/Right		0.0	A	0	0	0.0	A	0	0
	EB Approach		0.0	A	--	--	0.0	A	--	--
	NB Right		11.8	B	0	28	14.5	B	0	28
	NB Approach		11.8	B	--	--	14.5	B	--	--
	WB U-Turn	300	12.7	B	0	31	16.2	C	0	28
201: U-Turn 1 WB & US-70 Business	WB Approach		12.7	B	--	--	16.2	C	--	--
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.0	A	--	--	0.0	A	--	--
	EB U-Turn	360	12.5	B	0	31	12.8	B	0.1	33
4: Hardee Lane & US-70 Business	EB Approach		12.5	B	--	--	12.8	B	--	--
	EB U-Turn	175	16.2	C	0	27	16.5	C	0	32
	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	300	0.0	A	0	2	0.0	A	0	7
	EB Approach		0.1	A	--	--	0.1	A	--	--
	WB Left	200	10.9	B	0.2	51	15.2	C	0.2	49
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.4	A	--	--	0.3	A	--	--
	NB Left/Right		40.5	E	1.3	89	133.2	F	4.9	233
	NB Approach		40.5	E	--	--	133.2	F	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

3.2 2025 BACKGROUND TRAFFIC VOLUMES

Per the scoping information (see **Appendix A**), there are currently there are two approved developments in the project study area that will be fully built-out by 2025: Buckhorn Branch and Glen Laurel Mixed-Use. Listed below are the approved developments, site trip distribution assumptions, and proposed offsite improvements. All approved development information can be found in **Appendix E**.

- Buckhorn Branch
 - o TIA completed by Exult Engineering (sealed February 2, 2019)
 - o Located along US-70 Business west of Wildwood Drive
 - o Residential Development:
 - 205 Single Family Housing Units
 - 120 Multifamily Housing Units
 - o Trip distribution assumed to follow the same patterns found in the TIA (see **Appendix E**)
 - o No offsite improvements were included for the subject development
- Glen Laurel Mixed-Use
 - o TIA Addendum completed by Ramey Kemp and Associates (sealed June 23, 2020)
 - o Located along NC-42 north of the study area
 - o Mixed-Use Development:
 - Already Constructed:
 - 240 Multifamily Housing Units
 - 10,000 SF Bank
 - 7,000 SF Shopping Center
 - 14,000 SF Day Care
 - 120,900 SF Mini-Warehouse
 - Not Yet Constructed:
 - 126 Multifamily Housing Units
 - 68,000 SF Shopping Center
 - 80 Unit Congregate Care Facility
 - 66 Bed Assisted Living Facility
 - o Trips generated by this approved development were proportionally adjusted to account for developed land-uses. Once reduced, site trip distribution was assumed to follow the same patterns found in the TIA (see **Appendix E**)
 - o No off-site improvements at the study intersections

2025 ambient traffic volumes (existing traffic volumes multiplied by a 3% growth factor for 4 years) were calculated and are found in **Figure 3-1**. Projected and distributed trips from the approved developments (see **Appendix E**) were totaled and are in **Figure 3-2**. Approved development trips were then added to the ambient traffic volumes to determine the 2025 Background traffic volumes (see **Figure 3-3**).

3.3 2025 BACKGROUND TRAFFIC ANALYSIS

Table 3-2 summarizes the intersection LOS, delay, and queue lengths based on the existing geometry shown in **Figure 2-2** and the 2025 Background traffic volumes shown in **Figure 3-3**. The corresponding SYNCHRO and SimTraffic outputs are included in **Appendix D**. Note that (as mentioned in **Section 2.5**) the US-70 Business / Wildwood Drive intersection is modelled as two separate intersections; as a result, **Table 3-1** shows two results for the same intersection (Intersections 2 & 201).

The signalized intersection of US-70 Business / NC-42 / Rose Street is projected to operate at an overall LOS C and LOS E during the 2025 Background AM and PM peak hours, respectively. Multiple intersection

movements are projected to operate unacceptably during both peak hours. Multiple queue lengths are projected to exceed available turn-lane storage during both peak hours.

All US-70 Business / Wildwood Drive unsignalized intersection movements are projected to operate at a LOS C or better during both 2025 Background peak hours. Existing turn-lane storage is adequate to handle all projected SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours.

The northbound US-70 Business / Hardee Lane unsignalized intersection approach is projected to operate at a LOS F during both 2025 Background peak hours. All other intersection movements are projected to operate at a LOS C or better during both peak hours. Existing turn-lane storage is adequate to handle all projected SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours.

**Table 3-2: Intersection Level of Service, Delay, and Queue Summary
2025 Background Traffic Volumes**

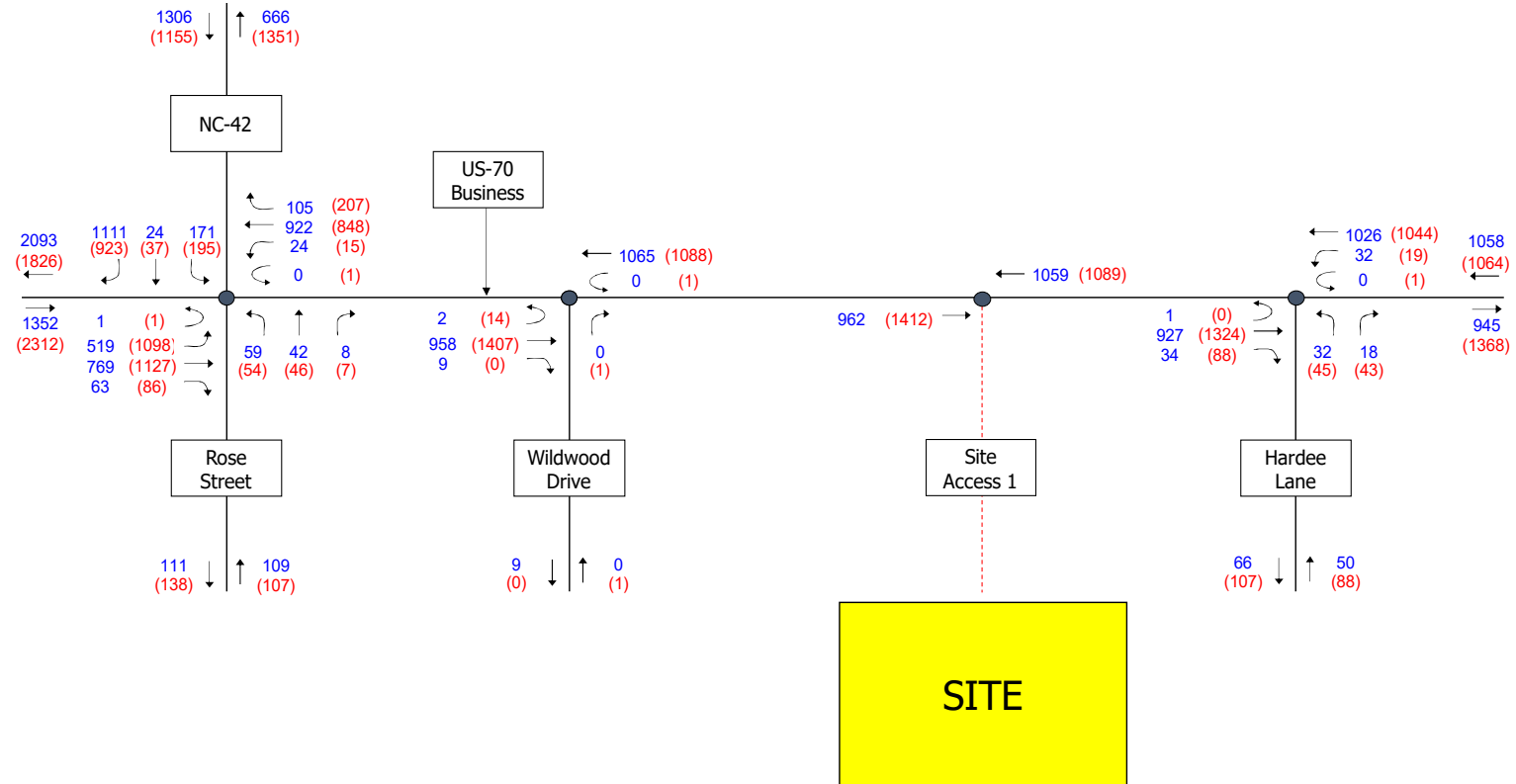
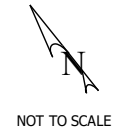
Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
1: Rose Street/NC-42 & US-70 Business	EB Dual Lefts	650	54.7	D	372	312	213.5	F	#1070	1805
	EB Thru		17.9	B	322	233	24.4	C	556	1801
	EB Right	200	7.3	A	49	76	8.7	A	81	191
	EB Approach		32.0	C	--	--	113.1	F	--	--
	WB Left	125	66.3	E	68	208	68.9	E	77	209
	WB Thru		44.5	D	575	400	48.7	D	511	397
	WB Right	400	0.1	A	0	72	0.2	A	0	164
	WB Approach		39.4	D	--	--	38.7	D	--	--
	NB Left	150	73.5	E	#216	170	73.8	E	158	152
	NB Thru		61.3	E	111	126	64.1	E	107	139
	NB Right	115	30.1	C	18	24	29.7	C	17	24
	NB Approach		67.6	E	--	--	68.1	E	--	--
	SB Left	350	62.3	E	196	183	63.1	E	225	203
	SB Left/Thru		62.7	E	202	568	67.9	E	262	351
	SB Right		4.9	A	0	404	2.5	A	0	--
	SB Approach		14.6	B	--	--	17.1	B	--	--
	Overall		29.6	C	--	--	70.5	E	--	--
2: Wildwood Drive/U-Turn 1 EB & US-70 Business	EB Thru/Right		0.0	A	0	0	0.0	A	0	0
	EB Approach		0.0	A	--	--	0.0	A	--	--
	NB Right		14.1	B	0.5	72	18.7	C	0.5	70
	NB Approach		14.1	B	--	--	18.7	C	--	--
	WB U-Turn	300	15.3	C	0	34	20.6	C	0.1	31
201: U-Turn 1 WB & US-70 Business	WB Approach		15.3	C	--	--	20.6	C	--	--
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.0	A	--	--	0.0	A	--	--
	EB U-Turn	360	14.1	B	0.2	44	14.8	B	0.2	48
4: Hardee Lane & US-70 Business	EB Approach		14.1	B	--	--	14.8	B	--	--
	EB U-Turn	175	20.7	C	0.3	52	22.0	C	0.2	49
	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	300	0.0	A	0	8	0.0	A	0	0
	EB Approach		0.4	A	--	--	0.2	A	--	--
	WB Left	200	12.4	B	0.2	62	18.6	C	0.3	53
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left/Right		112.9	F	3.2	145	550.0	F	9.4	394
	NB Approach		112.9	F	--	--	550.0	F	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

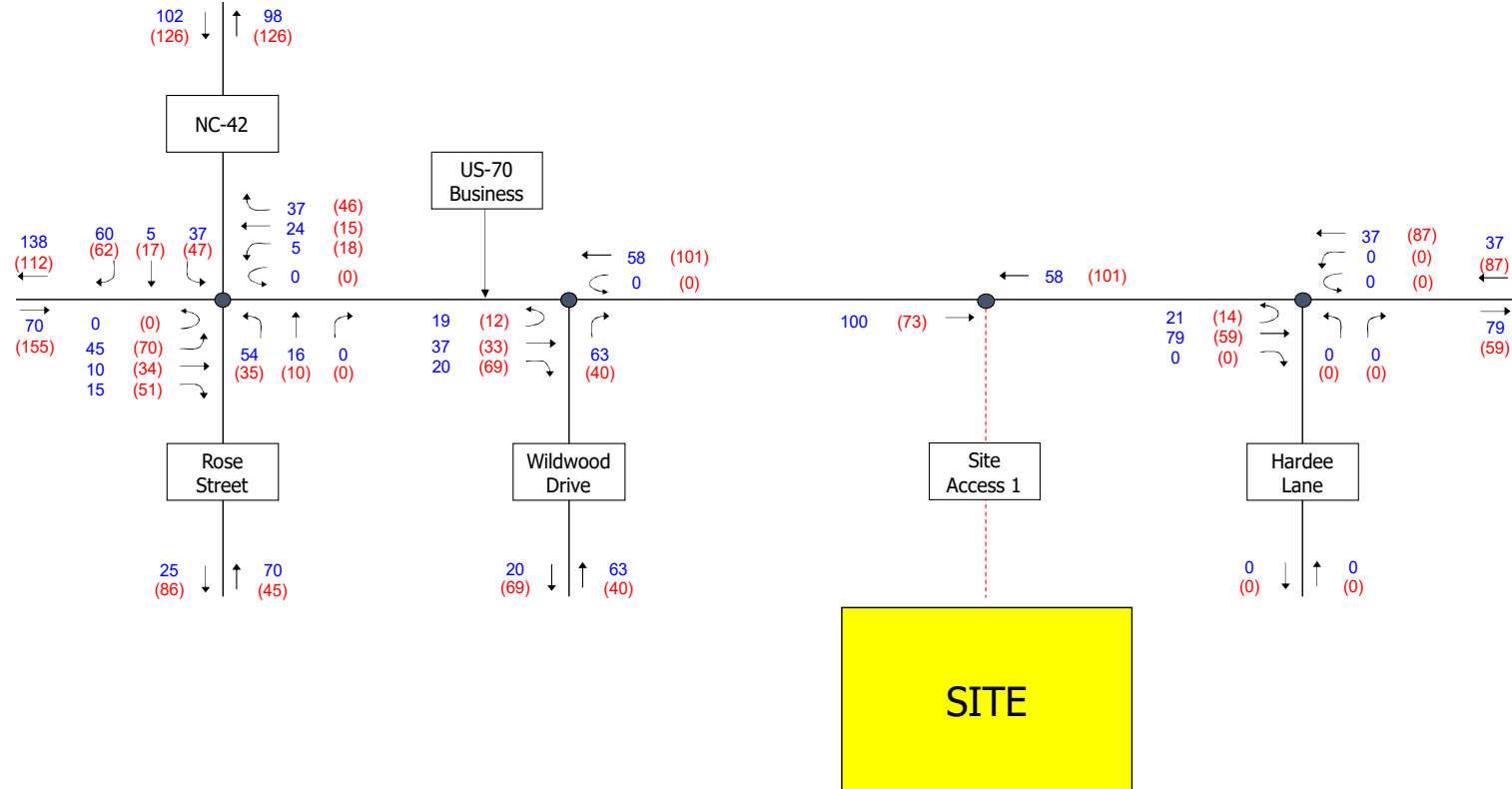
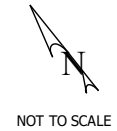


**Clayton Village Center
Traffic Impact Analysis
2025 Ambient Traffic Volumes**

Figure 3-1

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

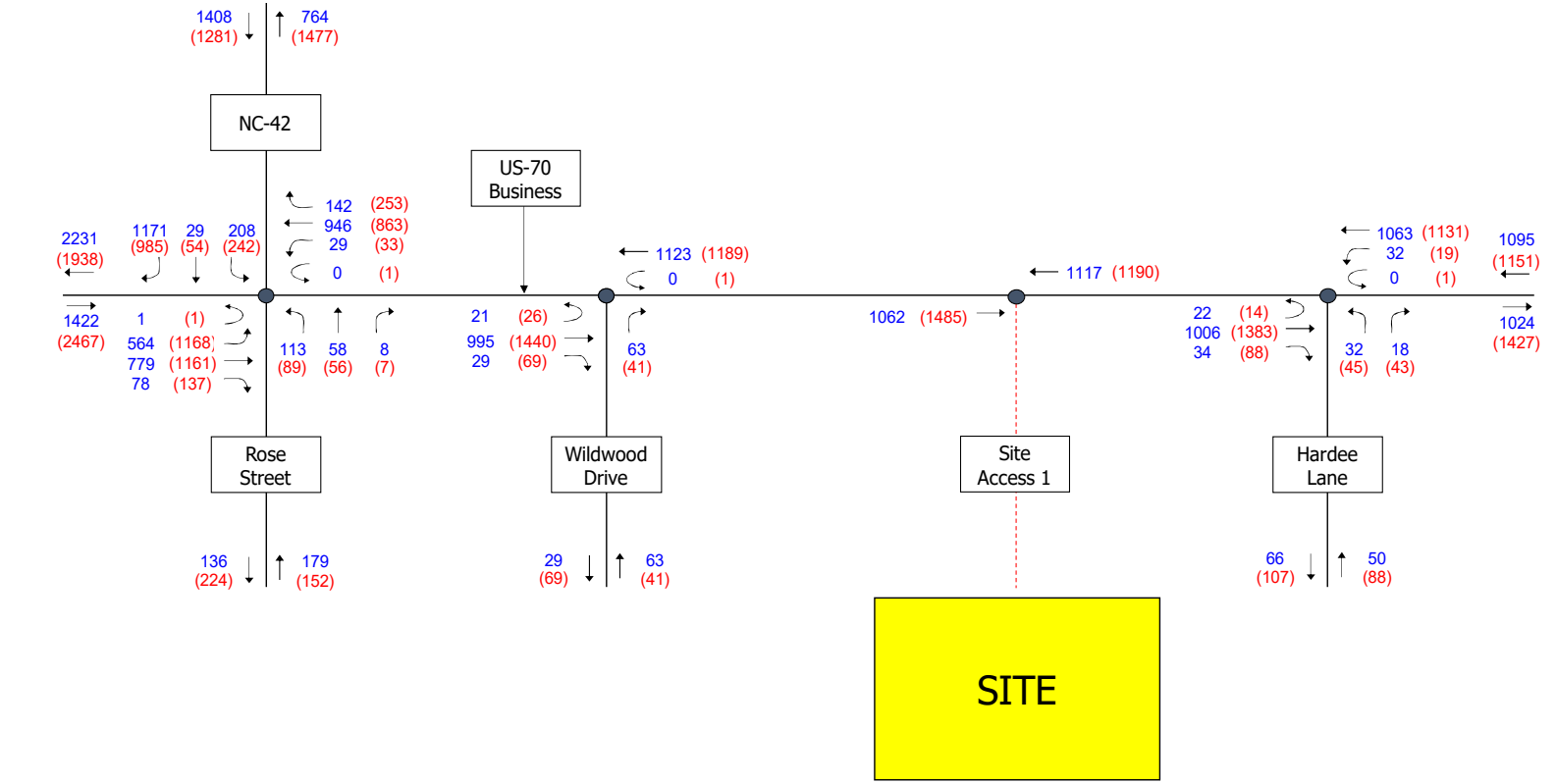


**Clayton Village Center
Traffic Impact Analysis**
2025 Approved Development Traffic Volumes

Figure 3-2

LEGEND:

- Existing Road
- Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis
2025 Background Traffic Volumes**

Figure 3-3

4 SITE TRIP GENERATION AND DISTRIBUTION

Clayton Village Center Development site trips were estimated based on the proposed land use supplied by the developer and subsequently distributed onto the surrounding roadway network.

4.1 TRIP GENERATION

The site-generated trips shown in **Table 4-1** are based on trip generation information provided in the 10th Edition of the Institute of Transportation Engineer's (ITE's) *Trip Generation Manual* and the anticipated development of 324 multifamily residential units and 5,100 SF of commercial space. The trip generation was calculated using the proposed number of residential units and square-footage as the independent variable. The provided equation was used to help generate trips (per NCDOT standards).

Table 4-1: Trip Generation Summary

ITE Land Use Code	Independent Variable	AM Peak Hour			PM Peak Hour			Daily Traffic
		In	Out	Total	In	Out	Total	
220 – Multifamily Housing (Low-Rise)	324 Units	34	112	146	106	62	168	2,409
820 – Shopping Center	5,100 SF	95	59	154	29	31	60	795
Subtotal:		129	171	300	135	93	228	3,204
Internal Capture (1% AM, 8% PM)		-1	-2	-3	-11	-7	-18	--
		128	169	297	124	86	210	3,204
Pass-by (LUC 820: 34% PM)		--	--	--	-9	-9	-18	--
Total:		128	169	297	115	77	192	3,204

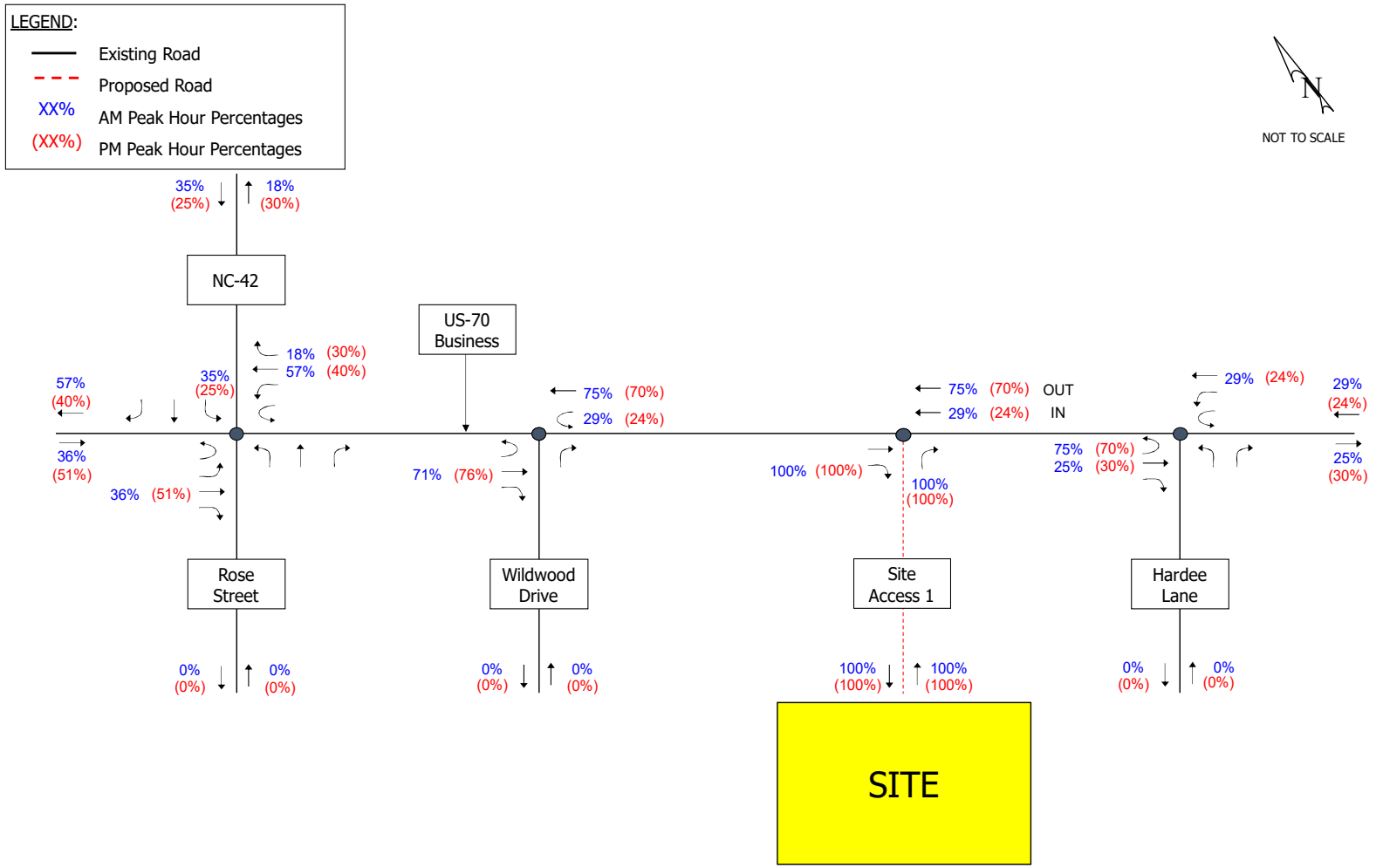
SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 10th Edition (2017)

Prior to internal capture and pass-by trip reductions, AM peak hour trips generated totaled 129 incoming and 171 outgoing vehicles where PM peak hour trips totaled 135 incoming and 93 outgoing vehicles. Average daily traffic (ADT) volumes generated by the development totaled 3,204 VPD.

Per NCDOT standards and procedures, internal capture and pass-by percentages were applied to the projected traffic volumes. An internal capture percentage (IC%) of 1% was applied to the generated AM traffic volumes and an IC% of 8% was applied to the PM traffic volumes generated by the development. Internal capture calculations are shown in **Appendix A**. A pass-by percentage of 34% was applied to the PM peak hour traffic for Land Use Codes (LUC) 820. Following all reductions, trips totaled 128 incoming and 169 outgoing AM peak hour trips and 115 incoming and 77 outgoing PM peak hour trips.

4.2 TRIP DISTRIBUTION

The directional traffic patterns, or trip distribution, of the site-generated traffic was determined using the existing AM and PM peak hour traffic characteristics. It was assumed, for purposes of this study, that all site traffic would enter and exit the study area in the same manner as the existing traffic. Total trips into and out of the study area using NC-42 and US-70 Business form the basis for the percentage distribution. The percentages were routed, via shortest path, to and from the proposed development. The distribution percentages were then applied to the generated trips to predict routes and project traffic volumes for the 2025 Build scenario. Trip distribution percentages are shown in **Figure 4-1** and trip distribution volumes are shown in **Figure 4-2**. Pass-by distribution percentages are shown in **Figure 4-3** and pass-by distribution volumes are shown in **Figure 4-4**. Pass-by volumes then were added to the site trip distribution volumes to determine the total site trip distribution volumes (see **Figure 4-5**).

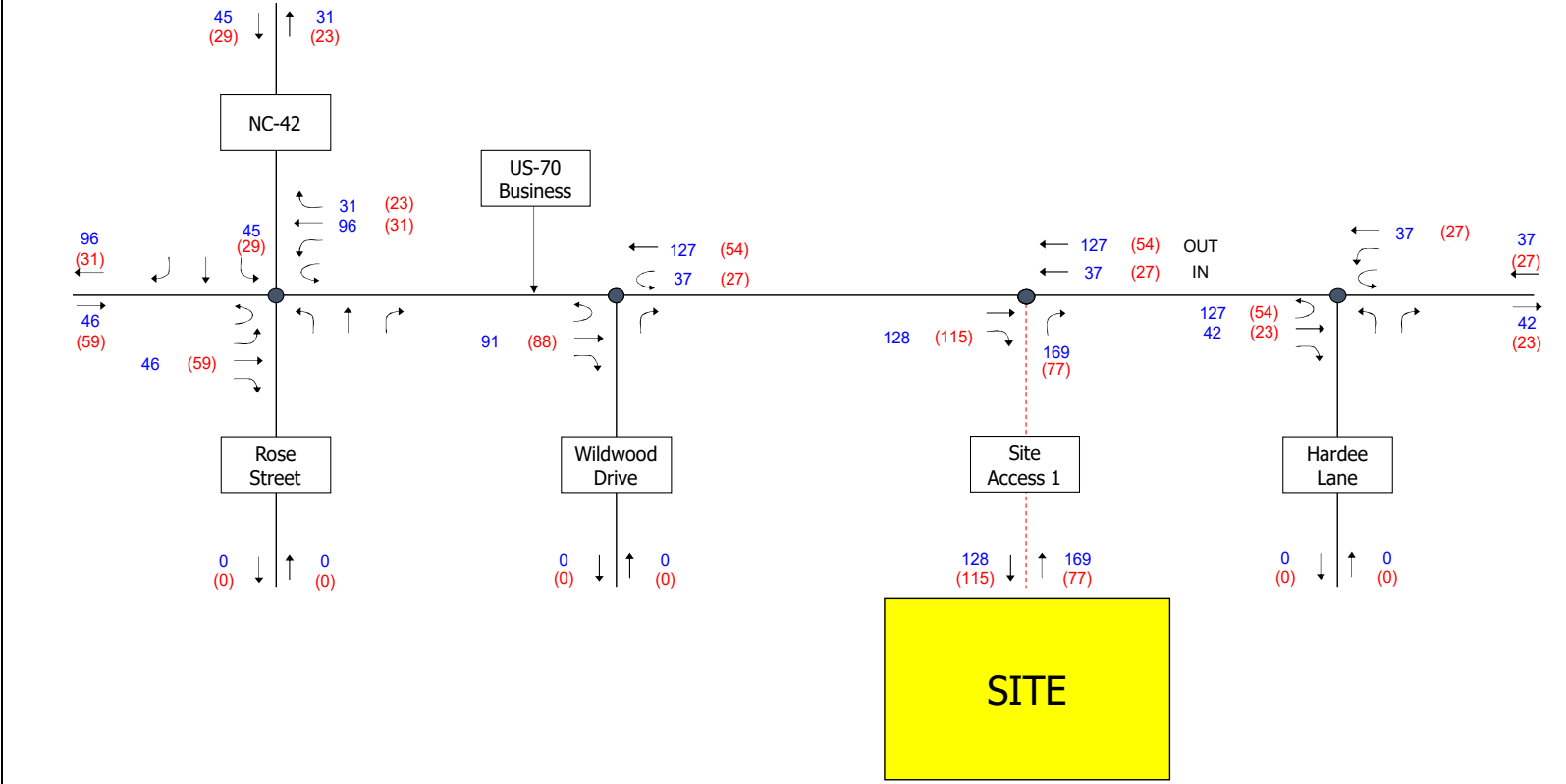


Clayton Village Center
Traffic Impact Analysis
 Trip Distribution Percentages

Figure 4-1

LEGEND:

- Existing Road
- Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

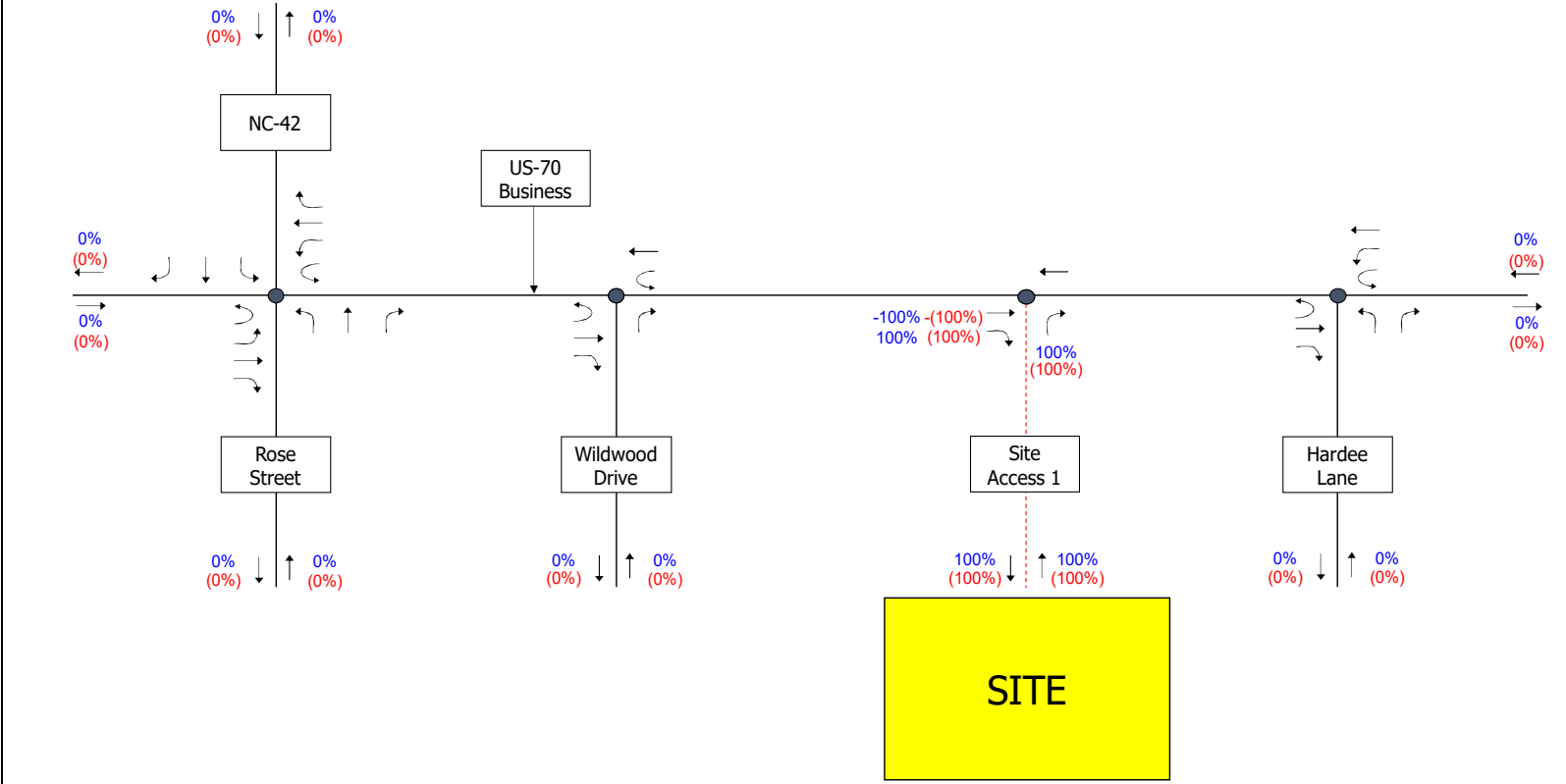


Clayton Village Center
Traffic Impact Analysis
 Trip Distribution Volumes

Figure 4-2

LEGEND:

- Existing Road
- Proposed Road
- XX% AM Peak Hour Percentages
- (XX%) PM Peak Hour Percentages

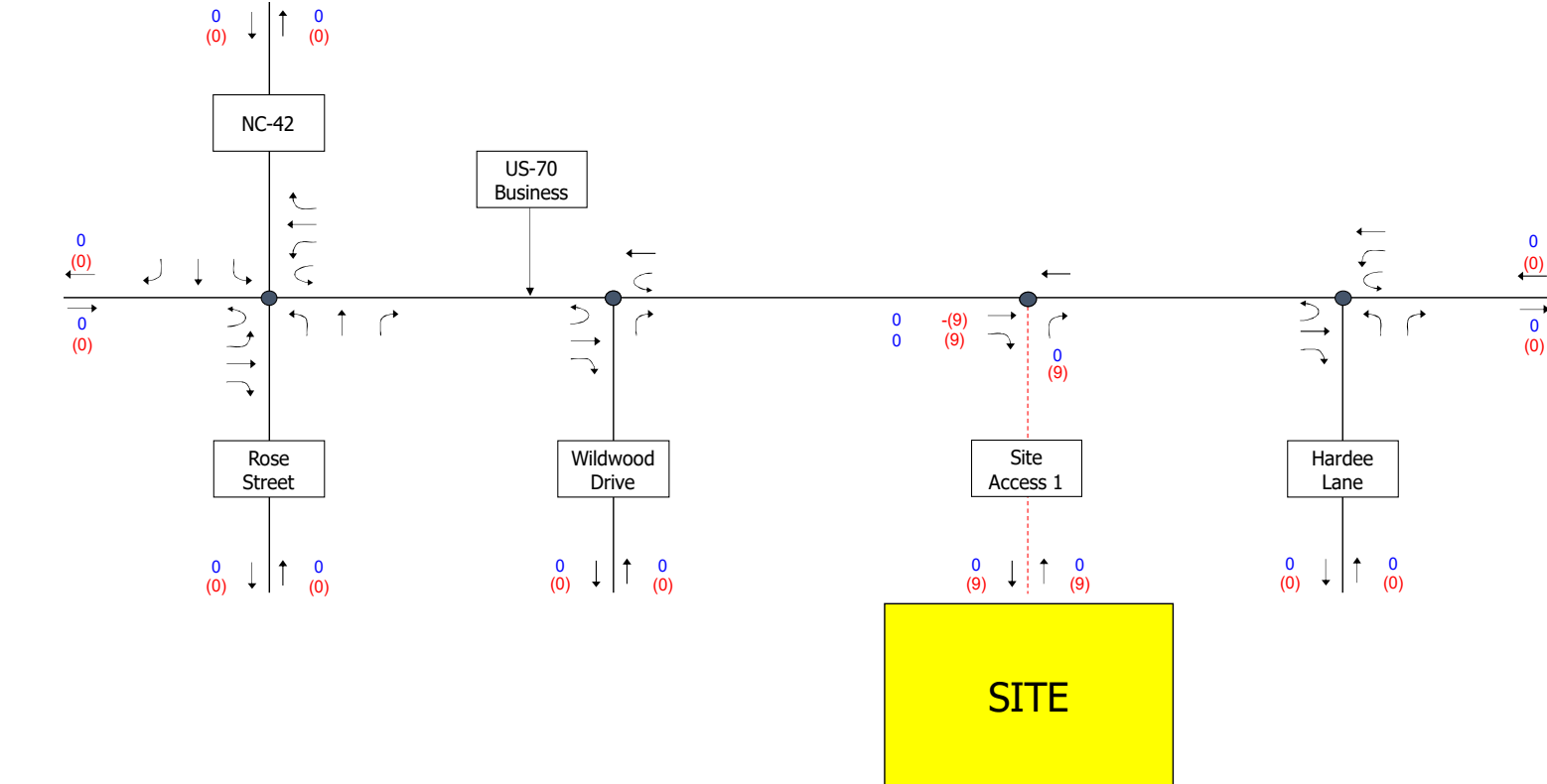
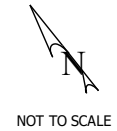


Clayton Village Center
Traffic Impact Analysis
 2025 Pass-by Distribution Percentages

Figure 4-3

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

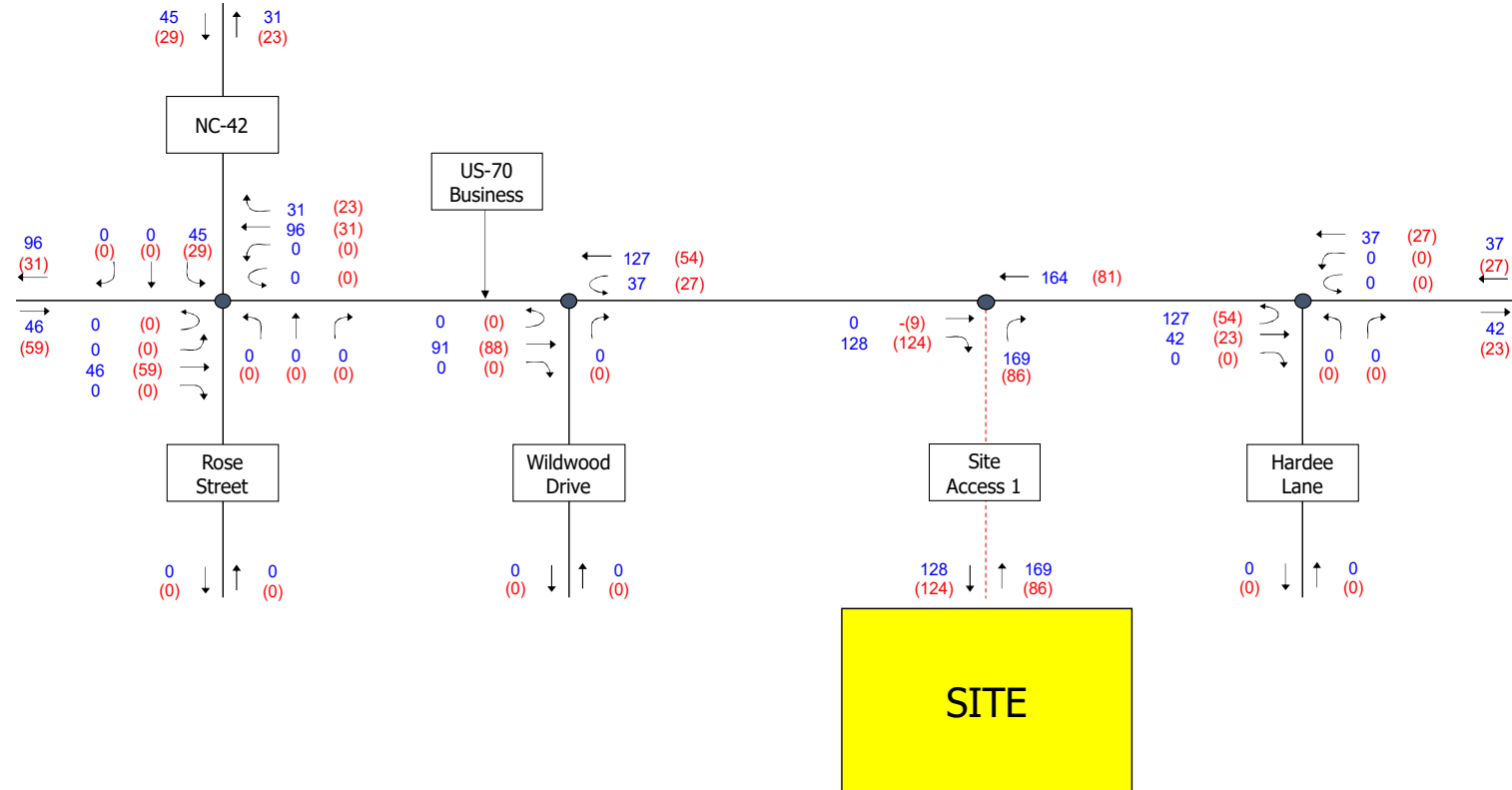
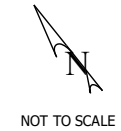


**Clayton Village Center
Traffic Impact Analysis
2025 Pass-by Distribution Volumes**

Figure 4-4

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis
2025 Total Distribution Volumes**

Figure 4-5

5 2025 BUILD CONDITION AND ANALYSIS

To complete the 2025 Build analyses (including the proposed development), the estimated site trips were added to the 2025 Background traffic volumes. The projected total volumes, along with the proposed intersection geometry, were used to complete the capacity analyses.

5.1 2025 BUILD TRAFFIC VOLUMES

The 2025 Background traffic volumes (**Figure 3-3**) were added to the projected site trips from the subject development (**Figure 4-5**) to generate the 2025 Build traffic volumes (background + site) shown in **Figure 5-1**.

To summarize, the 2025 Build traffic volumes (**Figures 5-1**) contain the following:

- 2021 Existing traffic volumes grown at a 3% ambient growth rate for four years;
- Approved development traffic from two (2) approved area developments; and
- Site trips generated by the subject development.

5.2 2025 BUILD ANALYSIS

Table 5-1 summarizes the intersection LOS, delay, and queue lengths based on the existing geometry shown in **Figure 2-2** and the 2025 Build traffic volumes shown in **Figure 5-1**. The corresponding SYNCHRO and SimTraffic outputs are included in **Appendix D**. Note that (as mentioned in **Section 2.5**) the US-70 Business / Wildwood Drive intersection is modelled as two separate intersections; as a result, **Table 3-1** shows two results for the same intersection (Intersections 2 & 201).

The signalized intersection of US-70 Business / NC-42 / Rose Street is projected to operate at an overall LOS C and LOS E during the 2025 Build AM and PM peak hours, respectively. Multiple intersection movements are projected to operate unacceptably during both peak hours. Multiple queue lengths are projected to exceed available turn-lane storage during both peak hours. Despite this fact, the overall intersection percent difference in delays (between the 2025 Background and 2025 Build scenarios) is less than 25% (with no letter grade change in intersection level of service), which does not trigger requirement for improvement recommendations per NCDOT's Driveway Manual. No improvements are recommended due to the proposed development's construction.

All US-70 Business / Wildwood Drive unsignalized intersection movements are projected to operate at a LOS C or better during both 2025 Build peak hours. Existing turn-lane storage is adequate to handle all projected SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours. Because all intersection approaches are projected to operate acceptably, no improvements are recommended due to the proposed development's construction.

All US-70 Business / Site Access 1 unsignalized intersection movements are projected to operate at a LOS C or better during both 2025 Build peak hours. Per the NCDOT Policy on Street and Driveway Access to North Carolina Highways Manual:

"Generally left and right turn lanes and tapers shall be considered when:

- *In accordance with G.S. 136-18(29), the average daily traffic meets or exceeds 4,000 vehicles per day on any secondary route (the average daily traffic should include both the existing traffic plus traffic generated by the proposed development)"*

With AADTs along US-70 Business exceeding 4,000 VPD, an eastbound right-turn lane is recommended at Site Access 1. Per the NCDOT nomograph (provided in the Driveway Manual – see **Appendix F**), and projected 2025 Build traffic volumes, a 100-foot eastbound right-turn lane (with appropriate taper) is recommended (see **Figure 6-1**). As shown in **Table 5-2**, following the construction of this improvement, all approaches are projected to continue to operate acceptably during both peak hours. No additional improvements are recommended at this intersection due to the development's construction.

The eastbound U-turn movement and the northbound intersection approach at the unsignalized intersection of US-70 Business / Hardee Lane is projected to operate unacceptably during at least one 2025 Build peak hour. All other intersection movements are projected to operate at a LOS C or better during both peak hours. The eastbound U-turn queue length is projected to exceed available turn-lane storage during the AM peak hour. Existing turn-lane storage is adequate to handle all other projected SYNCHRO 95th percentile and SimTraffic maximum queue lengths during both analyzed peak hours. To address queueing concerns, it is recommended that the eastbound U-turn lane full width storage be extended to 300-feet (with appropriate taper – see **Figure 6-1**). No additional improvements are recommended at this intersection due to the proposed development's construction. Note, the increased storage length will provide operational improvements; however, the aforementioned intersection recommendation will not result in level of service or delay changes in Synchro.

**Table 5-1: Intersection Level of Service, Delay, and Queue Summary
2025 Build Traffic Volumes**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
1: Rose Street/NC-42 & US-70 Business	EB Dual Lefts	650	59.0	E	372	322	224.8	F	#1080	1798
	EB Thru		18.5	B	346	242	25.4	C	600	1795
	EB Right	200	7.6	A	49	68	8.8	A	81	142
	EB Approach		33.5	C	--	--	116.9	F	--	--
	WB Left	125	69.8	E	68	224	70.6	E	82	211
	WB Thru		48.5	D	660	429	49.6	D	534	397
	WB Right	400	0.2	A	0	129	0.3	A	0	169
	WB Approach		42.3	D	--	--	39.0	D	--	--
	NB Left	150	80.1	F	#214	183	75.2	E	159	156
	NB Thru		64.8	E	110	150	65.1	E	108	135
	NB Right	115	31.5	C	18	29	30.3	C	17	22
	NB Approach		73.0	E	--	--	69.3	E	--	--
	SB Left	350	67.8	E	231	193	69.1	E	264	220
	SB Left/Thru		67.9	E	234	446	69.3	E	270	253
	SB Right		4.9	A	0	135	2.5	A	0	135
	SB Approach		17.1	B	--	--	19.1	B	--	--
	Overall		32.2	C	--	--	72.8	E	--	--
2: Wildwood Drive/U-Turn 1 EB & US-70 Business	EB Thru/Right		0.0	A	0	2	0.0	A	0	0
	EB Approach		0.0	A	--	--	0.0	A	--	--
	NB Right		15.0	C	0.6	92	19.9	C	0.6	68
	NB Approach		15.0	C	--	--	19.9	C	--	--
	WB U-Turn	300	17.9	C	0.4	70	24.7	C	0.5	59
	WB Approach		17.9	C	--	--	24.7	C	--	--
201: U-Turn 1 WB & US-70 Business	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.0	A	--	--	0.0	A	--	--
	EB U-Turn	360	15.2	C	0.2	46	15.3	C	0.2	43
	EB Approach		15.2	C	--	--	15.3	C	--	--
3: Site Access 1 & US-70 Business	EB Thru/Right		0.0	A	0	11	0.0	A	0	5
	EB Approach		0.0	A	--	--	0.0	A	--	--
	NB Right		21.3	C	2.4	118	23.8	C	1.4	84
	NB Approach		21.3	C	--	--	23.8	C	--	--
4: Hardee Lane & US-70 Business	EB U-Turn	175	48.3	E	4.5	209	30.2	D	1.5	103
	EB Thru		0.0	A	0	212	0.0	A	0	0
	EB Right	300	0.0	A	0	2	0.0	A	0	4
	EB Approach		5.8	A	--	--	1.3	A	--	--
	WB Left	200	12.8	B	0.3	56	19.0	C	0.3	51
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left/Right		1483.2	F	7.6	472	1292.4	F	11.6	483
	NB Approach		1483.2	F	--	--	1292.4	F	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

**Table 5-2: Intersection Level of Service, Delay, and Queue Summary
2025 Build Traffic Volumes with Recommended Improvements**

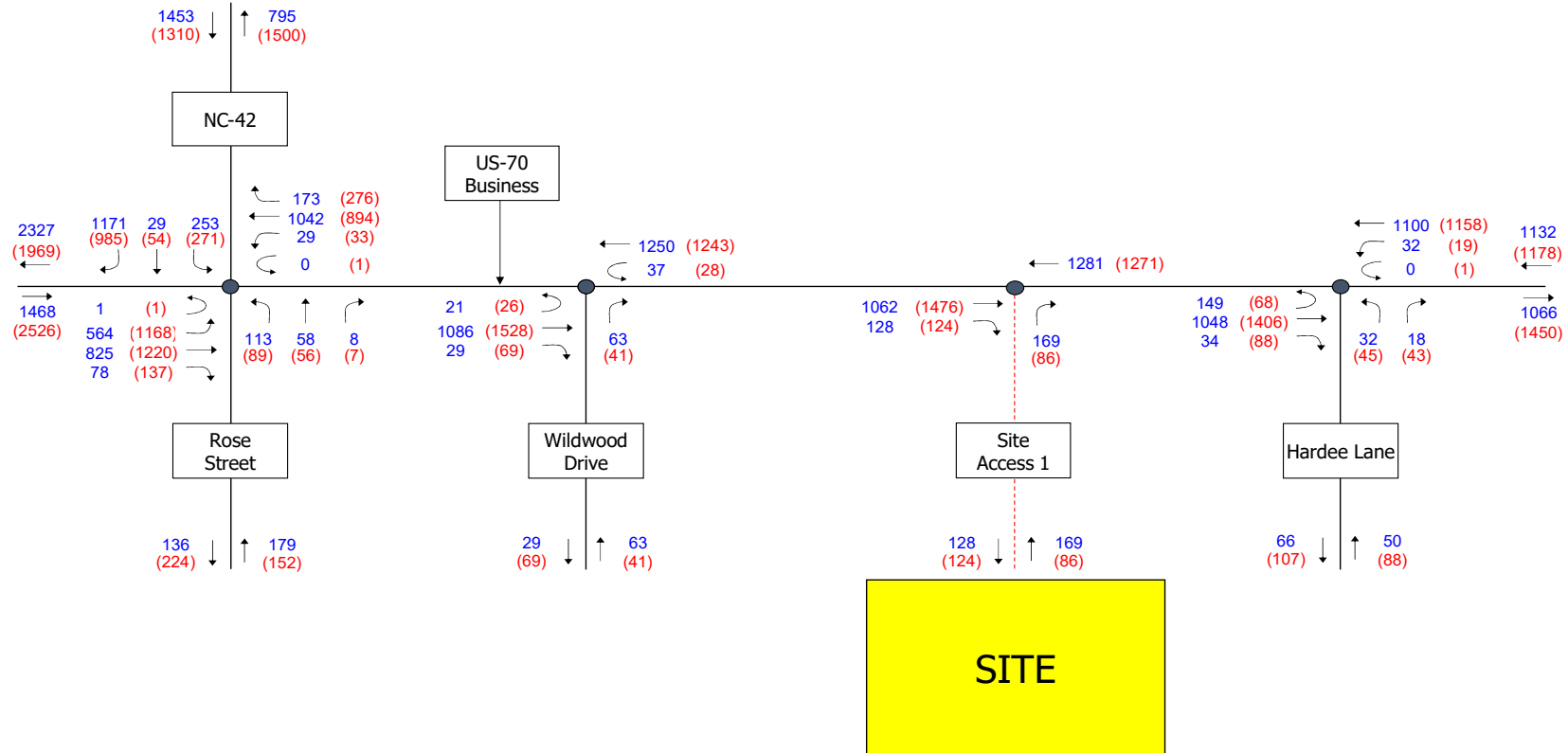
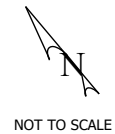
Intersection	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
3: Site Access 1 & US-70 Business	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	100	0.0	A	0	0	0.0	A	0	0
	EB Approach		0.0	A	--	--	0.0	A	--	--
	NB Right		18.6	C	2	125	21.1	C	1.2	77
	NB Approach		18.6	C	--	--	21.1	C	--	--
4: Hardee Lane & US-70 Business	EB U-Turn	300	48.3	F	4.5	253	30.2	D	1.5	86
	EB Thru		0.0	A	0	68	0.0	A	0	0
	EB Right	300	0.0	A	0	0	0.0	A	0	14
	EB Approach		5.8	A	--	--	1.3	A	--	--
	WB Left	200	12.8	B	0.3	0	19.0	C	0.3	0
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left/Right		1483.2	F	7.6	464	1292.4	F	11.6	476
	NB Approach		1483.2	F	--	--	1292.4	F	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis
2025 Build Traffic Volumes**

Figure 5-1

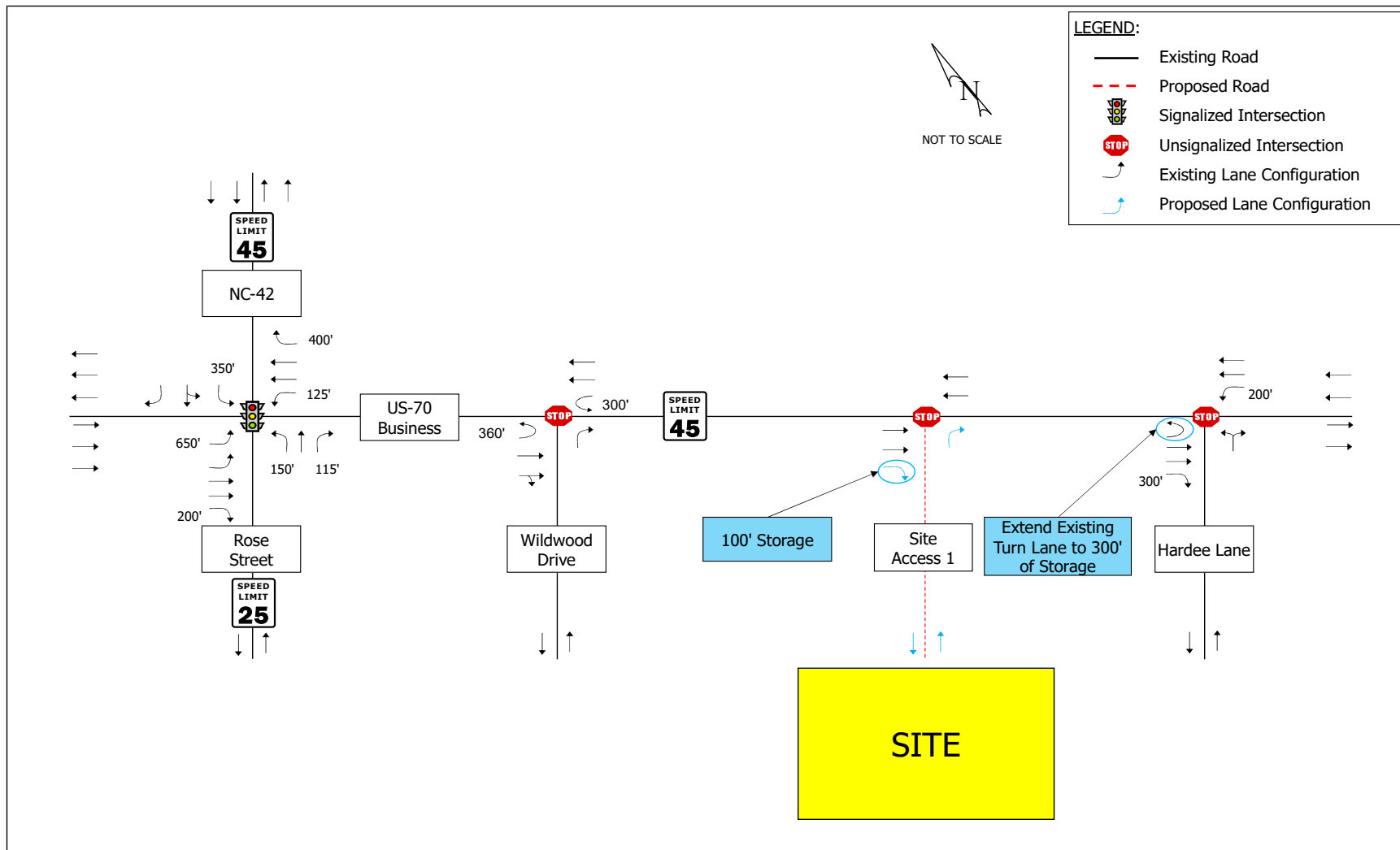
6 CONCLUSIONS AND RECOMMENDATIONS

Capacity analyses were performed for the following scenarios:

- 2021 Existing traffic volumes;
- 2025 Background traffic volumes; and
- 2025 Build traffic volumes (Background + site trips).

Based on the trips generated by the subject development, the following improvements (see **Figure 6-1**) in conjunction with the construction of the proposed development:

- US-70 Business / Site Access 1
 - o Construction of a 100-foot eastbound right-turn lane (with appropriate taper)
- US-70 Business / Hardee Lane
 - o Extend eastbound U-turn lane full width storage to 300' (with appropriate taper)



Appendix A – Scoping Information

Cc: sclawhorn@ncdot.gov; Joshua Baird <jbaird@townofclaytonnc.org>; robert@bartletteng.com;
Joe.Magnuson@timmons.com; Ben Howell <bhowell@townofclaytonnc.org>

Subject: RE: Clayton Village Center TIA

Jeff – I am comfortable leaving the study intersections the same and using the 3% growth rate as proposed. In addition to Buckhorn Branch (Build-Out is 2023), the remaining build-out of The Shoppes at Glen Laurel should be included since its near the intersection of NC 42 and US 70 Business. I will work on getting the remain site plans and details to you to input in the background traffic.

Let me know if you have any other questions.

Thanks,

Jonathan K. Jacobs, PE

Town of Clayton
Assistant Town Engineer
111 E. Second Street
Clayton, NC 27520
(919) 359-1297
ClaytonNC.org



Please note that email sent to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Jeff Hochanadel <Jeff.Hochanadel@timmons.com>

Sent: Monday, September 20, 2021 7:29 AM

To: Lawhorn, Samuel C <sclawhorn@ncdot.gov>; Joshua Baird <jbaird@townofclaytonnc.org>

Cc: Robert Bartlett <robert@bartletteng.com>; Joe Magnuson <Joe.Magnuson@timmons.com>

Subject: Clayton Village Center TIA

Be Advised: This email originated from outside of the Town of Clayton's network. Do not click links or open attachments unless you recognize the sender and know the content is safe.

All,

Timmons Group would like to scope the Clayton Village Center Development TIA (update), located in Clayton, NC. This study will be an update to a previously submitted TIA sealed 10/30/2019. Per the attached conceptual site plan, the proposed development will include two right-in/right-out site access connections to US-70 Business (original study included one site access connection to US-70 Business). The updated study will include 5,100 SF of commercial development and 324 apartment units (original study included 15,950 SF of commercial development and 155 apartment units). It is assumed that the project study area will not change, but new peak period turning movement traffic counts will be collected at existing project study area intersections. Please let me know if you would like to meet to discuss the subject project or if this email will suffice.

Our scoping assumptions include the following:

- Study Area Intersections:
 - Site Access 1 / US-70 Business (Right-In-Right-Out)
 - Site Access 2 / US-70 Business (Right-In-Right-Out)
 - NC-42 / Rose Street / US-70 Business
 - Wildwood Drive / US-70 Business
 - Hardee Lane / US-70 Business
- Growth Rate:
 - 3.0%
 - Differs from original TIA
 - Calculated using published US-70 Business and NC-42 AADTs
- Approved Area Developments:
 - Buckhorn Branch (Assumed to be built by 2022)
 - Others?
- STIP Projects:
 - U-6223
 - 2022 construction
 - Will connect Rose Street with SR 1563 (Little Creek Church Road)
 - Are future analyses required due to this STIP project?
- Build-Out Year:
 - 2025

I did not include Congestion Management on this email, but will be happy to CC them as needed.

Please do not hesitate to contact me with any questions.

Thanks!
Jeff

Jeff Hochanadel, PE, PTOE

North Carolina Transportation Group Leader

TIMMONS GROUP | www.timmons.com

5410 Trinity Rd, Suite 102 | Raleigh, NC 27607

Office: 919.866.4511 | Fax: 919.859.5663

Cell: 919.426.8405

jeff.hochanadel@timmons.com

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To send me files greater than 20MB [click here](#)

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Clayton Village Center	Organization:	Timmons Group
Project Location:	Clayton, NC	Performed By:	Joe Magnuson
Scenario Description:	TIA	Date:	9/20/2021
Analysis Year:	2025	Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	5	Th. Sq. Ft.	154	95	59
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	324	D.U.	146	34	112
Hotel				0		
All Other Land Uses ²				0		
				300	129	171

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses ²	1.10	0%	0%	1.10	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	330	142	188
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips ⁵	297	128	169
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	1%	2%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	3%	1%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Clayton Village Center
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.10	0	0	1.10	0	0
Retail	1.10	95	105	1.10	59	65
Restaurant	1.10	0	0	1.10	0	0
Cinema/Entertainment	1.10	0	0	1.10	0	0
Residential	1.10	34	37	1.10	112	123
Hotel	1.10	0	0	1.10	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	19		8	0	9	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	25	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		34	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	8		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	18	0	0		0
Hotel	0	4	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	1	104	105	95	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	36	37	33	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	1	64	65	58	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	122	123	111	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Clayton Village Center			Organization:	Timmons Group
Project Location:	Clayton, NC			Performed By:	Joe Magnuson
Scenario Description:	TIA			Date:	9/20/2021
Analysis Year:	2025			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	5	Th. Sq. Ft.	60	29	31
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	324	D.U.	168	106	62
Hotel				0		
All Other Land Uses ²				0		
				228	135	93

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses ²	1.10	0%	0%	1.10	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					1000	
Restaurant						
Cinema/Entertainment						
Residential		1000				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	8	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	251	149	102
Internal Capture Percentage	8%	7%	10%
External Vehicle-Trips ⁵	210	126	84
External Transit-Trips ⁵	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	6%	24%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	7%	3%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Clayton Village Center
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.10	0	0	1.10	0	0
Retail	1.10	29	32	1.10	31	34
Restaurant	1.10	0	0	1.10	0	0
Cinema/Entertainment	1.10	0	0	1.10	0	0
Residential	1.10	106	117	1.10	62	68
Hotel	1.10	0	0	1.10	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		10	1	8	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	22	14	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	5	0
Retail	0		0	0	54	0
Restaurant	0	16		0	19	0
Cinema/Entertainment	0	1	0		5	0
Residential	0	2	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	2	30	32	27	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	8	109	117	99	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	8	26	34	24	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	66	68	60	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix B – Traffic Counts



TRAFFIC DATA COLLECTION

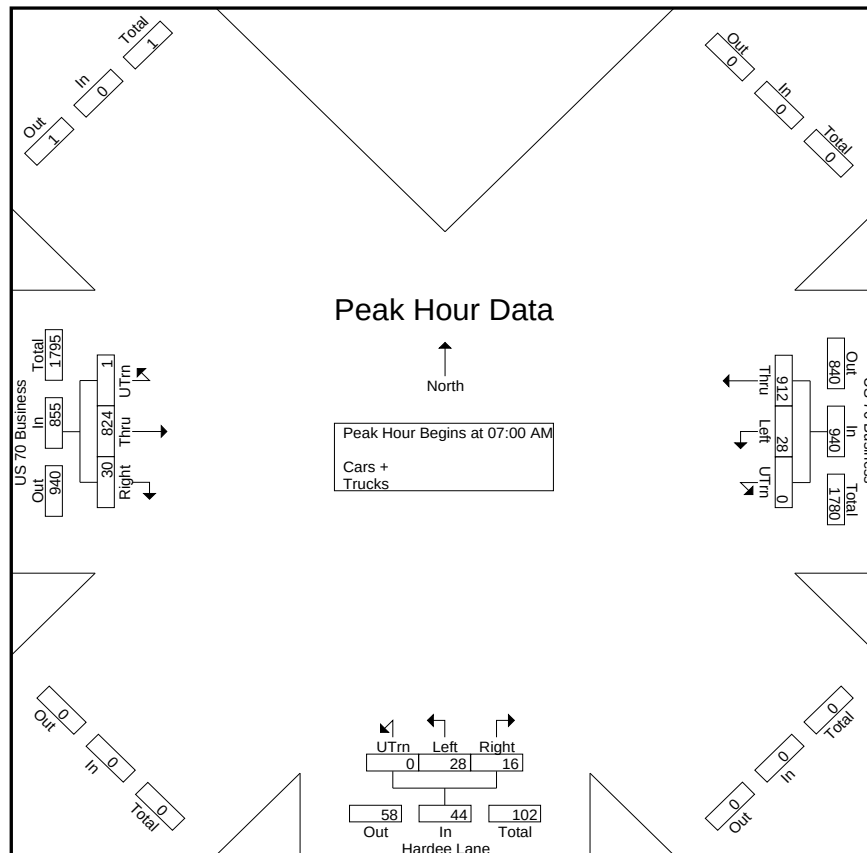
File Name : Clayton(US 70 Bus and Hardee)AM Peak

Site Code :

Start Date : 10/19/2021

Page No : 2

	US 70 Business Westbound					Hardee Lane Northbound					US 70 Business Eastbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1															
Peak Hour for Entire Intersection Begins at 07:00 AM															
07:00 AM	227	12	0	239	3	5	0	8	8	162	0	170	417		
07:15 AM	239	5	0	244	6	6	0	12	10	206	0	216	472		
07:30 AM	207	7	0	214	6	7	0	13	6	211	0	217	444		
07:45 AM	239	4	0	243	1	10	0	11	6	245	1	252	506		
Total Volume	912	28	0	940	16	28	0	44	30	824	1	855	1839		
% App. Total	97	3	0		36.4	63.6	0		3.5	96.4	0.1				
PHF	.954	.583	.000	.963	.667	.700	.000	.846	.750	.841	.250	.848	.909		





TRAFFIC DATA COLLECTION

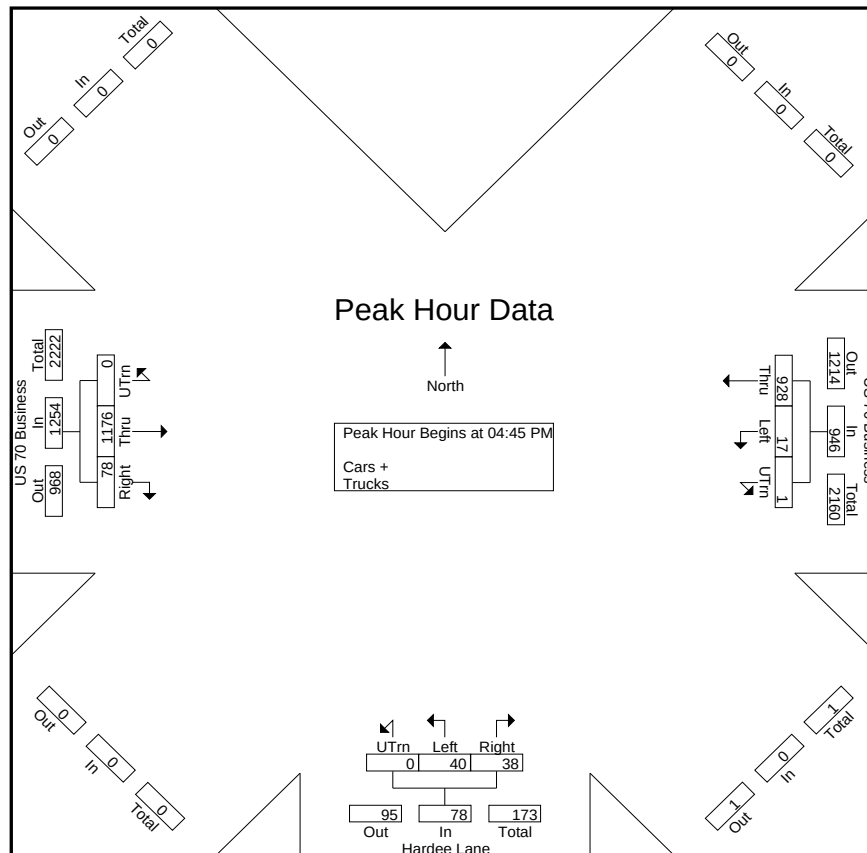
File Name : Clayton(US 70 Bus and Hardee)PM Peak

Site Code :

Start Date : 10/19/2021

Page No : 2

	US 70 Business Westbound				Hardee Lane Northbound				US 70 Business Eastbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	230	2	0	232	5	11	0	16	21	289	0	310	558
05:00 PM	248	4	1	253	9	8	0	17	13	278	0	291	561
05:15 PM	250	9	0	259	4	8	0	12	30	306	0	336	607
05:30 PM	200	2	0	202	20	13	0	33	14	303	0	317	552
Total Volume	928	17	1	946	38	40	0	78	78	1176	0	1254	2278
% App. Total	98.1	1.8	0.1		48.7	51.3	0		6.2	93.8	0		
PHF	.928	.472	.250	.913	.475	.769	.000	.591	.650	.961	.000	.933	.938

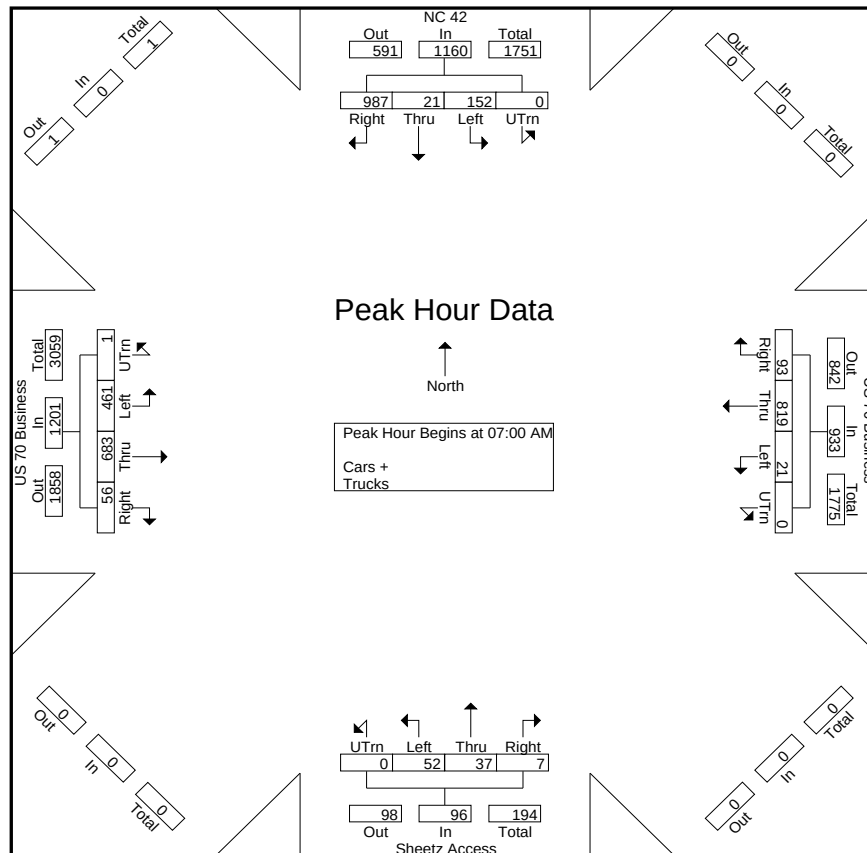




TRAFFIC DATA COLLECTION

File Name : Clayton(US 70 Bus and NC 42)AM Peak
 Site Code :
 Start Date : 10/19/2021
 Page No : 2

	NC 42 Southbound					US 70 Business Westbound					Sheetz Access Northbound					US 70 Business Eastbound					
Start Time	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	250	7	19	0	276	23	229	5	0	257	1	10	19	0	30	12	146	92	1	251	814
07:15 AM	259	2	54	0	315	22	187	2	0	211	0	9	13	0	22	9	154	99	0	262	810
07:30 AM	240	6	36	0	282	18	201	6	0	225	2	7	12	0	21	21	170	122	0	313	841
07:45 AM	238	6	43	0	287	30	202	8	0	240	4	11	8	0	23	14	213	148	0	375	925
Total Volume	987	21	152	0	1160	93	819	21	0	933	7	37	52	0	96	56	683	461	1	1201	3390
% App. Total	85.1	1.8	13.1	0		10	87.8	2.3	0		7.3	38.5	54.2	0		4.7	56.9	38.4	0.1		
PHF	.953	.750	.704	.000	.921	.775	.894	.656	.000	.908	.438	.841	.684	.000	.800	.667	.802	.779	.250	.801	.916

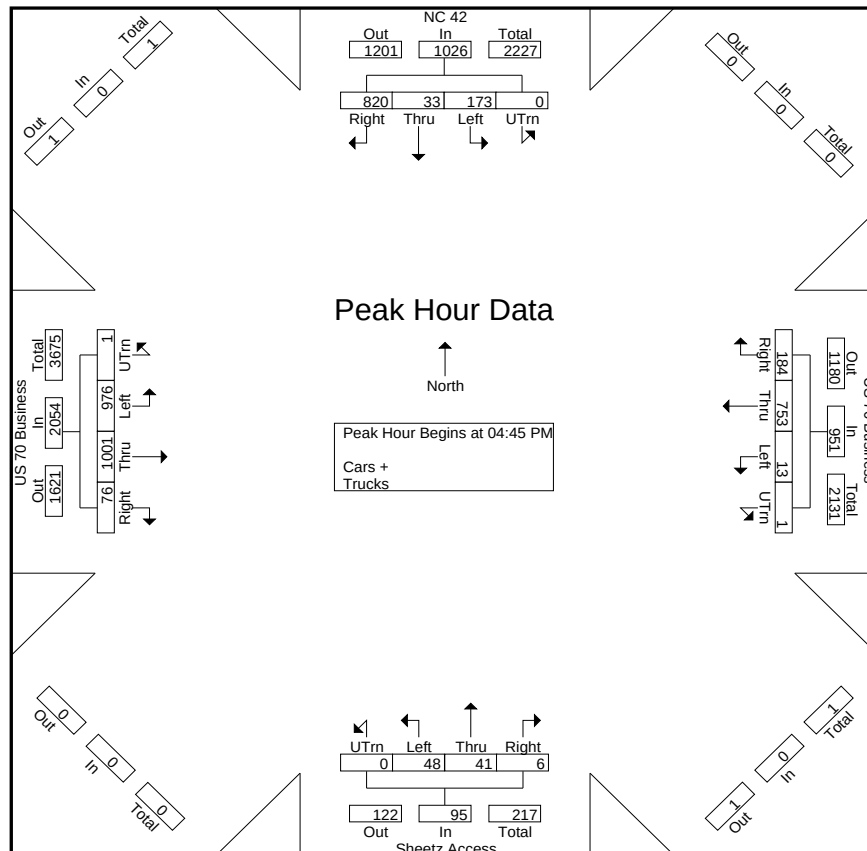




TRAFFIC DATA COLLECTION

File Name : Clayton(US 70 Bus and NC 42)PM Peak
 Site Code :
 Start Date : 10/19/2021
 Page No : 2

	NC 42 Southbound					US 70 Business Westbound					Sheetz Access Northbound					US 70 Business Eastbound					
Start Time	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	221	9	54	0	284	48	181	3	1	233	2	8	9	0	19	21	218	253	0	492	1028
05:00 PM	186	8	34	0	228	41	191	2	0	234	1	12	11	0	24	13	250	256	0	519	1005
05:15 PM	208	6	53	0	267	52	207	2	0	261	1	8	16	0	25	17	262	235	1	515	1068
05:30 PM	205	10	32	0	247	43	174	6	0	223	2	13	12	0	27	25	271	232	0	528	1025
Total Volume	820	33	173	0	1026	184	753	13	1	951	6	41	48	0	95	76	1001	976	1	2054	4126
% App. Total	79.9	3.2	16.9	0		19.3	79.2	1.4	0.1		6.3	43.2	50.5	0		3.7	48.7	47.5	0		
PHF	.928	.825	.801	.000	.903	.885	.909	.542	.250	.911	.750	.788	.750	.000	.880	.760	.923	.953	.250	.973	.966

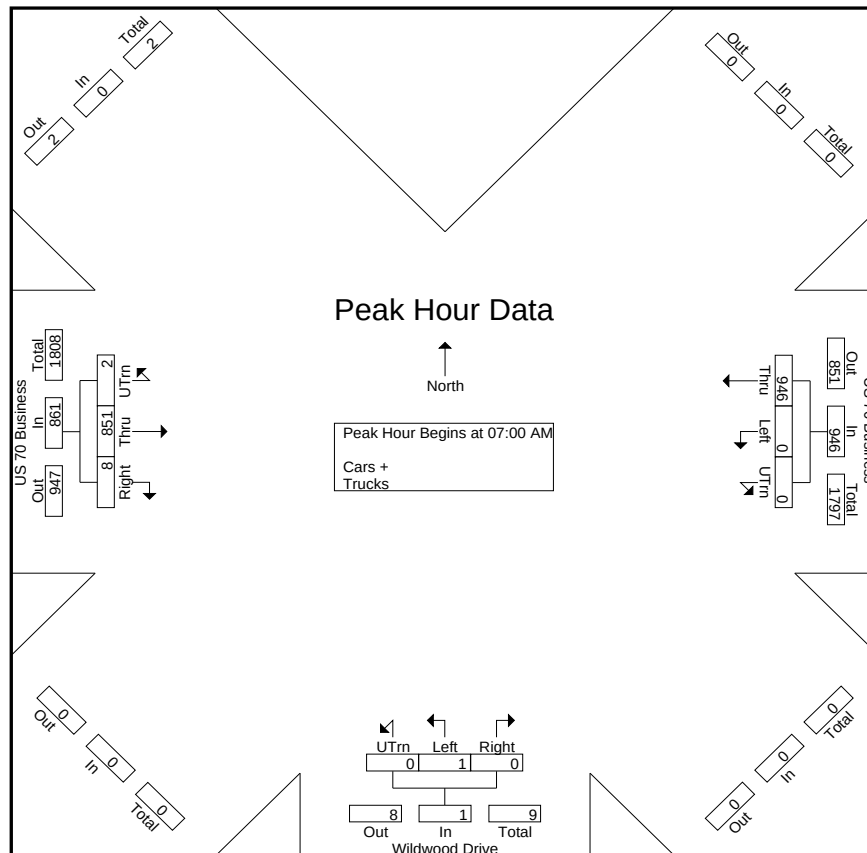




TRAFFIC DATA COLLECTION

File Name : Clayton(US 70 Bus and Wildwood)AM Peak
 Site Code :
 Start Date : 10/19/2021
 Page No : 2

	US 70 Business Westbound				Wildwood Drive Northbound				US 70 Business Eastbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	240	0	0	240	0	0	0	0	4	166	0	170	410
07:15 AM	247	0	0	247	0	1	0	1	1	216	0	217	465
07:30 AM	218	0	0	218	0	0	0	0	0	217	1	218	436
07:45 AM	241	0	0	241	0	0	0	0	3	252	1	256	497
Total Volume	946	0	0	946	0	1	0	1	8	851	2	861	1808
% App. Total	100	0	0		0	100	0		0.9	98.8	0.2		
PHF	.957	.000	.000	.957	.000	.250	.000	.250	.500	.844	.500	.841	.909

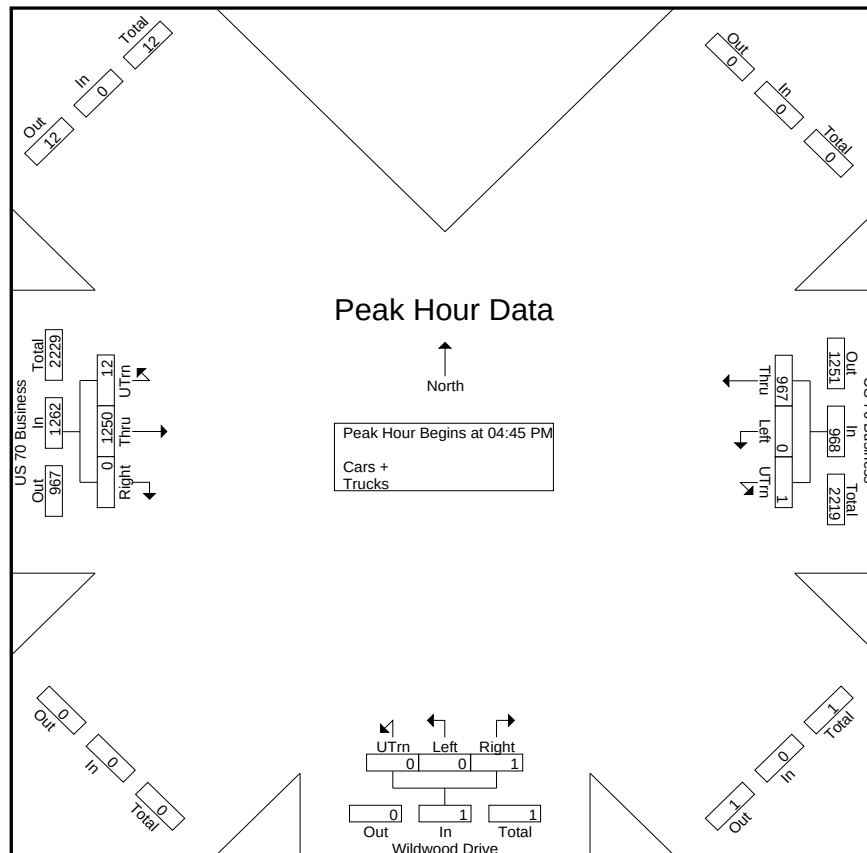




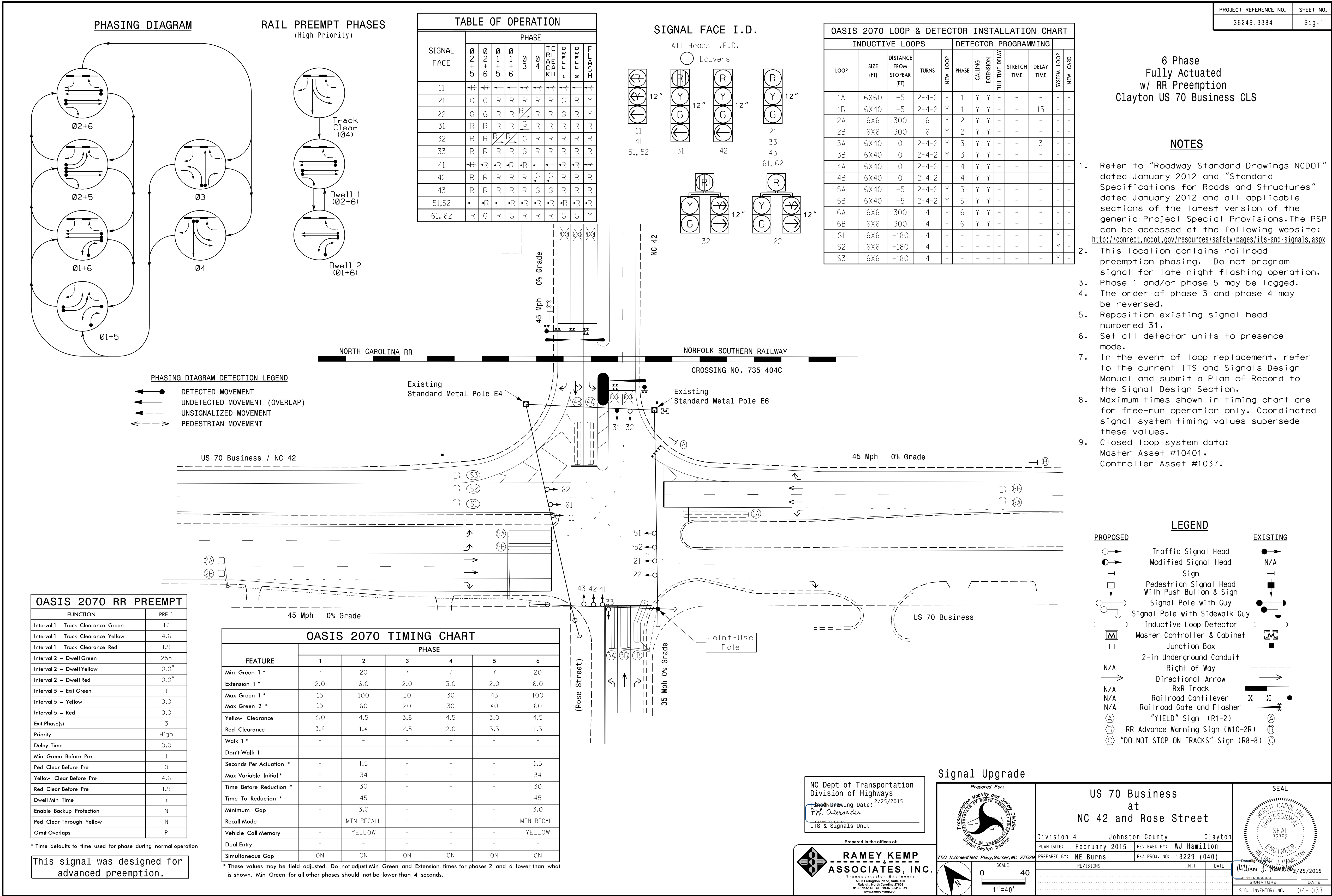
TRAFFIC DATA COLLECTION

File Name : Clayton(US 70 Bus and Wildwood)PM Peak
 Site Code :
 Start Date : 10/19/2021
 Page No : 2

	US 70 Business Westbound				Wildwood Drive Northbound				US 70 Business Eastbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	234	0	0	234	0	0	0	0	0	313	8	321	555
05:00 PM	264	0	0	264	1	0	0	1	0	293	0	293	558
05:15 PM	257	0	1	258	0	0	0	0	0	324	2	326	584
05:30 PM	212	0	0	212	0	0	0	0	0	320	2	322	534
Total Volume	967	0	1	968	1	0	0	1	0	1250	12	1262	2231
% App. Total	99.9	0	0.1		100	0	0		0	99	1		
PHF	.916	.000	.250	.917	.250	.000	.000	.250	.000	.965	.375	.968	.955



Appendix C – Approved Developments



Appendix D – Synchro and SimTraffic Analysis Output

2021 Existing Traffic Volumes

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	683	56	21	819	93	52	37	7	152	21	987
Future Volume (vph)	462	683	56	21	819	93	52	37	7	152	21	987
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.963	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1704	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.963	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1704	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	513	759	62	23	910	103	58	41	8	169	23	1097
Shared Lane Traffic (%)										44%		
Lane Group Flow (vph)	513	759	62	23	910	103	58	41	8	95	97	1097
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2021 AM Existing
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	22.3	55.9	71.6	9.2	35.5	98.8	10.4	10.4	16.9	13.5	13.5	98.8
Actuated g/C Ratio	0.23	0.57	0.72	0.09	0.36	1.00	0.11	0.11	0.17	0.14	0.14	1.00
v/c Ratio	0.66	0.38	0.05	0.14	0.72	0.07	0.31	0.21	0.03	0.41	0.42	0.69
Control Delay	41.8	15.1	7.0	53.0	32.8	0.1	53.1	50.9	25.0	50.8	50.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	15.1	7.0	53.0	32.8	0.1	53.1	50.9	25.0	50.8	50.7	2.5
LOS	D	B	A	D	C	A	D	D	C	D	D	A
Approach Delay		25.0			30.0			50.2			9.7	
Approach LOS		C			C			D			A	
Queue Length 50th (ft)	156	158	14	14	260	0	35	25	3	58	61	0
Queue Length 95th (ft)	264	252	34	48	432	0	92	70	15	138	141	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	1297	2853	1231	191	2101	1583	286	301	294	453	459	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.27	0.05	0.12	0.43	0.07	0.20	0.14	0.03	0.21	0.21	0.69

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 98.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 21.8

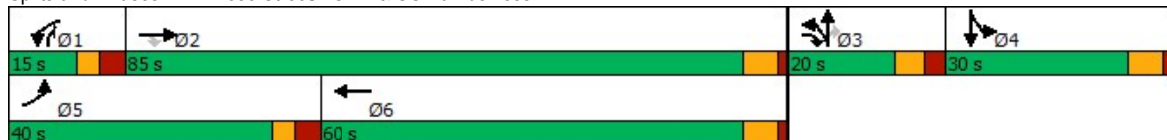
Intersection LOS: C

Intersection Capacity Utilization 59.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business



Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	851	8	0	0	0	0	0	4	4	0	0
Future Vol, veh/h	0	851	8	0	0	0	0	0	4	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	946	9	0	0	0	0	0	4	4	0	0
Major/Minor	Major1					Minor1			Minor2			
Conflicting Flow All	-	0	0			-	-	478	473	-	-	
Stage 1	-	-	-			-	-	-	0	-	-	
Stage 2	-	-	-			-	-	-	473	-	-	
Critical Hdwy	-	-	-			-	-	6.94	7.54	-	-	
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-			-	-	-	6.54	-	-	
Follow-up Hdwy	-	-	-			-	-	3.32	3.52	-	-	
Pot Cap-1 Maneuver	0	-	-			0	0	534	474	0	0	
Stage 1	0	-	-			0	0	-	-	0	0	
Stage 2	0	-	-			0	0	-	541	0	0	
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-			-	-	534	470	-	-	
Mov Cap-2 Maneuver	-	-	-			-	-	-	470	-	-	
Stage 1	-	-	-			-	-	-	-	-	-	
Stage 2	-	-	-			-	-	-	536	-	-	
Approach	EB					NB			SB			
HCM Control Delay, s	0					11.8			12.7			
HCM LOS						B			B			
Minor Lane/Major Mvmt	NBLn1		EBT	EBR SBLn1								
Capacity (veh/h)	534		-	- 470								
HCM Lane V/C Ratio	0.008		-	- 0.009								
HCM Control Delay (s)	11.8		-	- 12.7								
HCM Lane LOS	B		-	- B								
HCM 95th %tile Q(veh)	0		-	- 0								

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	1.2							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	4	824	30	4	28	912	28	16
Future Vol, veh/h	4	824	30	4	28	912	28	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	4	916	33	4	31	1013	31	18
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1013	0	0	916	949	0	1501	458
Stage 1	-	-	-	-	-	-	924	-
Stage 2	-	-	-	-	-	-	577	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	326	-	-	376	719	-	113	550
Stage 1	-	-	-	-	-	-	347	-
Stage 2	-	-	-	-	-	-	525	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	326	-	-	641	641	-	105	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	-
Stage 1	-	-	-	-	-	-	343	-
Stage 2	-	-	-	-	-	-	496	-
Approach	EB		WB		NB			
HCM Control Delay, s	0.1		0.4		40.5			
HCM LOS					E			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	149	326	-	-	641	-		
HCM Lane V/C Ratio	0.328	0.014	-	-	0.055	-		
HCM Control Delay (s)	40.5	16.2	-	-	10.9	-		
HCM Lane LOS	E	C	-	-	B	-		
HCM 95th %tile Q(veh)	1.3	0	-	-	0.2	-		

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	946	4	0
Future Vol, veh/h	0	0	0	946	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1051	4	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	526	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	526	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	482	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	557	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	482	-
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	557	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	12.5	-	-
HCM LOS	-	-	-	B	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	482	-	-	-	-
HCM Lane V/C Ratio	-	0.009	-	-	-	-
HCM Control Delay (s)	-	12.5	-	-	-	-
HCM Lane LOS	-	B	-	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-	-

Queuing and Blocking Report
2021 AM Existing

12/06/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	R
Maximum Queue (ft)	208	233	180	166	48	120	271	288	53	99	93	25
Average Queue (ft)	113	146	97	71	8	21	164	181	5	41	28	5
95th Queue (ft)	192	209	162	145	30	73	250	268	30	83	68	19
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650				200	125			400	150		115
Storage Blk Time (%)				0			15				0	
Queuing Penalty (veh)				0			3				0	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB
Directions Served	L	LT
Maximum Queue (ft)	146	165
Average Queue (ft)	31	87
95th Queue (ft)	92	142
Link Distance (ft)		1333
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	350	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	NB	SB
Directions Served	R	L
Maximum Queue (ft)	28	31
Average Queue (ft)	4	3
95th Queue (ft)	20	19
Link Distance (ft)	310	126
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2021 AM Existing

12/06/2021

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	WB	NB
Directions Served	U	R	UL	LR
Maximum Queue (ft)	21	2	52	89
Average Queue (ft)	2	0	14	28
95th Queue (ft)	14	2	40	69
Link Distance (ft)				459
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	175	300	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
2021 AM Existing

12/06/2021

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 3

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	977	1001	76	14	753	184	48	41	6	173	33	820
Future Volume (vph)	977	1001	76	14	753	184	48	41	6	173	33	820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1711	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1711	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1086	1112	84	16	837	204	53	46	7	192	37	911
Shared Lane Traffic (%)										41%		
Lane Group Flow (vph)	1086	1112	84	16	837	204	53	46	7	113	116	911
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2021 PM Existing
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	35.4	67.1	82.0	8.6	34.2	114.6	9.9	9.9	18.5	14.8	14.8	114.6
Actuated g/C Ratio	0.31	0.59	0.72	0.08	0.30	1.00	0.09	0.09	0.16	0.13	0.13	1.00
v/c Ratio	1.02	0.54	0.07	0.12	0.79	0.13	0.35	0.29	0.03	0.52	0.52	0.58
Control Delay	74.0	17.4	6.9	57.1	43.4	0.2	59.3	57.4	27.5	57.3	57.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	17.4	6.9	57.1	43.4	0.2	59.3	57.4	27.5	57.3	57.3	1.5
LOS	E	B	A	E	D	A	E	E	C	E	E	A
Approach Delay		44.0			35.2			56.4			12.7	
Approach LOS		D			D			E			B	
Queue Length 50th (ft)	~439	274	20	11	292	0	37	32	3	82	85	0
Queue Length 95th (ft)	#724	410	44	38	411	0	88	79	14	161	163	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	1061	2500	1206	156	1719	1583	234	247	276	371	377	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.44	0.07	0.10	0.49	0.13	0.23	0.19	0.03	0.30	0.31	0.58

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 114.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 34.5

Intersection LOS: C

Intersection Capacity Utilization 73.5%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business



Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	1250	4	0	0	0	0	0	4	4	0	0
Future Vol, veh/h	0	1250	4	0	0	0	0	0	4	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1389	4	0	0	0	0	0	4	4	0	0
Major/Minor	Major1					Minor1			Minor2			
Conflicting Flow All	-	0	0			-	-	697	695	-	-	
Stage 1	-	-	-			-	-	-	0	-	-	
Stage 2	-	-	-			-	-	-	695	-	-	
Critical Hdwy	-	-	-			-	-	6.94	7.54	-	-	
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-			-	-	-	6.54	-	-	
Follow-up Hdwy	-	-	-			-	-	3.32	3.52	-	-	
Pot Cap-1 Maneuver	0	-	-			0	0	383	329	0	0	
Stage 1	0	-	-			0	0	-	-	0	0	
Stage 2	0	-	-			0	0	-	399	0	0	
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-			-	-	383	325	-	-	
Mov Cap-2 Maneuver	-	-	-			-	-	-	325	-	-	
Stage 1	-	-	-			-	-	-	-	-	-	
Stage 2	-	-	-			-	-	-	394	-	-	
Approach	EB					NB			SB			
HCM Control Delay, s	0					14.5			16.2			
HCM LOS						B			C			
Minor Lane/Major Mvmt	NBLn1		EBT	EBR SBLn1								
Capacity (veh/h)	383		-	- 325								
HCM Lane V/C Ratio	0.012		-	- 0.014								
HCM Control Delay (s)	14.5		-	- 16.2								
HCM Lane LOS	B		-	- C								
HCM 95th %tile Q(veh)	0		-	- 0								

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	4.7							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕↕	↗		↖	↕↕	↘	
Traffic Vol, veh/h	4	1176	78	4	17	928	40	38
Future Vol, veh/h	4	1176	78	4	17	928	40	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	4	1307	87	4	19	1031	44	42
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1031	0	0	1307	1394	0	1877	654
Stage 1	-	-	-	-	-	-	1315	-
Stage 2	-	-	-	-	-	-	562	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	317	-	-	210	487	-	63	409
Stage 1	-	-	-	-	-	-	215	-
Stage 2	-	-	-	-	-	-	534	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	317	-	-	375	375	-	58	409
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	-
Stage 1	-	-	-	-	-	-	212	-
Stage 2	-	-	-	-	-	-	501	-
Approach	EB		WB		NB			
HCM Control Delay, s	0.1		0.3		133.2			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	100	317	-	-	375	-		
HCM Lane V/C Ratio	0.867	0.014	-	-	0.062	-		
HCM Control Delay (s)	133.2	16.5	-	-	15.2	-		
HCM Lane LOS	F	C	-	-	C	-		
HCM 95th %tile Q(veh)	4.9	0	-	-	0.2	-		

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	967	12	0
Future Vol, veh/h	0	0	0	967	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1074	13	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	537	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	537	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	474	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	550	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	474	-
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	550	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	12.8	-	-
HCM LOS	-	-	-	B	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	474	-	-	-	-
HCM Lane V/C Ratio	-	0.028	-	-	-	-
HCM Control Delay (s)	-	12.8	-	-	-	-
HCM Lane LOS	-	B	-	-	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-	-

Queuing and Blocking Report
2021 PM Existing

11/02/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	507	663	284	258	71	93	287	298	124	97	86	20
Average Queue (ft)	315	351	136	117	11	18	183	196	28	36	33	2
95th Queue (ft)	518	595	253	222	39	60	259	275	89	75	73	13
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		0										
Storage Bay Dist (ft)	650				200	125			400	150		100
Storage Blk Time (%)	0	1		1			23			0	0	
Queuing Penalty (veh)	1	4		1			4			0	0	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB
Directions Served	L	LT
Maximum Queue (ft)	164	194
Average Queue (ft)	52	110
95th Queue (ft)	129	178
Link Distance (ft)		1333
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	350	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	NB	SB
Directions Served	R	L
Maximum Queue (ft)	35	31
Average Queue (ft)	4	4
95th Queue (ft)	22	21
Link Distance (ft)	313	126
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2021 PM Existing

11/02/2021

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	WB	NB
Directions Served	U	R	UL	LR
Maximum Queue (ft)	32	4	49	173
Average Queue (ft)	3	0	11	58
95th Queue (ft)	17	3	36	136
Link Distance (ft)				459
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	175	300	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	35
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
2021 PM Existing

11/02/2021

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 10

2025 Background Traffic Volumes

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	779	78	29	946	142	113	58	8	208	29	1171
Future Volume (vph)	565	779	78	29	946	142	113	58	8	208	29	1171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.963	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1704	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.963	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1704	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	628	866	87	32	1051	158	126	64	9	231	32	1301
Shared Lane Traffic (%)										44%		
Lane Group Flow (vph)	628	866	87	32	1051	158	126	64	9	129	134	1301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2025 AM Background
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effct Green (s)	28.3	69.6	88.2	9.2	43.8	123.3	13.4	13.4	22.6	17.1	17.1	123.3
Actuated g/C Ratio	0.23	0.56	0.72	0.07	0.36	1.00	0.11	0.11	0.18	0.14	0.14	1.00
v/c Ratio	0.80	0.43	0.08	0.24	0.84	0.10	0.66	0.32	0.03	0.56	0.57	0.82
Control Delay	54.7	17.9	7.3	66.3	44.5	0.1	73.5	61.3	30.1	62.3	62.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	17.9	7.3	66.3	44.5	0.1	73.5	61.3	30.1	62.3	62.7	4.9
LOS	D	B	A	E	D	A	E	E	C	E	E	A
Approach Delay		32.0			39.4			67.6			14.6	
Approach LOS		C			D			E			B	
Queue Length 50th (ft)	245	228	22	25	411	0	97	48	4	103	107	0
Queue Length 95th (ft)	372	322	49	68	575	0	#216	111	18	196	202	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	1006	2371	1158	148	1630	1583	222	234	305	352	356	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.37	0.08	0.22	0.64	0.10	0.57	0.27	0.03	0.37	0.38	0.82

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 123.3

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 29.6

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business

 Ø1	 Ø2	 Ø3	 Ø4
15 s	85 s	20 s	30 s
 Ø5	 Ø6		
40 s	60 s		

Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	995	29	0	0	0	0	0	63	4	0	0
Future Vol, veh/h	0	995	29	0	0	0	0	0	63	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1106	32	0	0	0	0	0	70	4	0	0
Major/Minor	Major1					Minor1			Minor2			
Conflicting Flow All	-	0	0			-	-	569	553	-	-	
Stage 1	-	-	-			-	-	-	0	-	-	
Stage 2	-	-	-			-	-	-	553	-	-	
Critical Hdwy	-	-	-			-	-	6.94	7.54	-	-	
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-			-	-	-	6.54	-	-	
Follow-up Hdwy	-	-	-			-	-	3.32	3.52	-	-	
Pot Cap-1 Maneuver	0	-	-			0	0	465	416	0	0	
Stage 1	0	-	-			0	0	-	-	0	0	
Stage 2	0	-	-			0	0	-	485	0	0	
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-			-	-	465	353	-	-	
Mov Cap-2 Maneuver	-	-	-			-	-	-	353	-	-	
Stage 1	-	-	-			-	-	-	-	-	-	
Stage 2	-	-	-			-	-	-	412	-	-	
Approach	EB					NB			SB			
HCM Control Delay, s	0					14.1			15.3			
HCM LOS						B			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	SBLn1								
Capacity (veh/h)	465	-	-	353								
HCM Lane V/C Ratio	0.151	-	-	0.013								
HCM Control Delay (s)	14.1	-	-	15.3								
HCM Lane LOS	B	-	-	C								
HCM 95th %tile Q(veh)	0.5	-	-	0								

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	2.9							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	22	1006	34	4	32	1063	32	18
Future Vol, veh/h	22	1006	34	4	32	1063	32	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	24	1118	38	4	36	1181	36	20
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1181	0	0	1118	1156	0	1837	559
Stage 1	-	-	-	-	-	-	1166	-
Stage 2	-	-	-	-	-	-	671	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	254	-	-	279	600	-	67	472
Stage 1	-	-	-	-	-	-	259	-
Stage 2	-	-	-	-	-	-	470	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	254	-	-	527	527	-	56	472
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	-
Stage 1	-	-	-	-	-	-	235	-
Stage 2	-	-	-	-	-	-	434	-
Approach	EB		WB		NB			
HCM Control Delay, s	0.4		0.4		112.9			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	82	254	-	-	527	-		
HCM Lane V/C Ratio	0.678	0.096	-	-	0.076	-		
HCM Control Delay (s)	112.9	20.7	-	-	12.4	-		
HCM Lane LOS	F	C	-	-	B	-		
HCM 95th %tile Q(veh)	3.2	0.3	-	-	0.2	-		

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	1123	21	0
Future Vol, veh/h	0	0	0	1123	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1248	23	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	624	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	624	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	417	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	496	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	417	-	-
Mov Cap-2 Maneuver	-	-	-	417	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	496	-	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	14.1	-	-
HCM LOS	-	-	-	B	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	417	-	-	-	-
HCM Lane V/C Ratio	-	0.056	-	-	-	-
HCM Control Delay (s)	-	14.1	-	-	-	-
HCM Lane LOS	-	B	-	-	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-	-

Queuing and Blocking Report
2025 AM Background

12/06/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	R
Maximum Queue (ft)	279	312	230	233	76	209	386	400	72	170	126	24
Average Queue (ft)	165	194	133	114	12	44	238	257	11	85	44	5
95th Queue (ft)	252	280	208	204	43	148	352	367	50	149	95	18
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650				200	125			400	150		115
Storage Blk Time (%)				0		0	32	0		2	0	
Queuing Penalty (veh)				0		0	9	1		1	0	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	183	568	404
Average Queue (ft)	74	139	27
95th Queue (ft)	165	353	306
Link Distance (ft)		1333	1333
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	350		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	NB	SB
Directions Served	R	L
Maximum Queue (ft)	72	34
Average Queue (ft)	32	5
95th Queue (ft)	59	23
Link Distance (ft)	310	126
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2025 AM Background

12/06/2021

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	WB	NB
Directions Served	U	R	UL	LR
Maximum Queue (ft)	49	8	59	145
Average Queue (ft)	15	0	17	47
95th Queue (ft)	41	5	45	128
Link Distance (ft)				459
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	175	300	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	44
Average Queue (ft)	17
95th Queue (ft)	44
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
2025 AM Background

12/06/2021

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 12

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1169	1161	137	34	863	253	89	56	7	242	54	985
Future Volume (vph)	1169	1161	137	34	863	253	89	56	7	242	54	985
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1713	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1713	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1299	1290	152	38	959	281	99	62	8	269	60	1094
Shared Lane Traffic (%)										44%		
Lane Group Flow (vph)	1299	1290	152	38	959	281	99	62	8	151	178	1094
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2025 PM Background
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effct Green (s)	35.5	71.2	88.6	9.2	41.6	129.3	12.3	12.3	21.5	19.6	19.6	129.3
Actuated g/C Ratio	0.27	0.55	0.69	0.07	0.32	1.00	0.10	0.10	0.17	0.15	0.15	1.00
v/c Ratio	1.38	0.66	0.14	0.30	0.84	0.18	0.59	0.35	0.03	0.59	0.69	0.69
Control Delay	213.5	24.4	8.7	68.9	48.7	0.2	73.8	64.1	29.7	63.1	67.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	213.5	24.4	8.7	68.9	48.7	0.2	73.8	64.1	29.7	63.1	67.9	2.5
LOS	F	C	A	E	D	A	E	E	C	E	E	A
Approach Delay		113.1			38.7			68.1			17.1	
Approach LOS		F			D			E			B	
Queue Length 50th (ft)	~746	416	45	31	395	0	80	49	4	124	149	0
Queue Length 95th (ft)	#1070	556	81	77	511	0	158	107	17	225	262	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	942	2221	1120	138	1526	1583	208	219	274	329	335	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.38	0.58	0.14	0.28	0.63	0.18	0.48	0.28	0.03	0.46	0.53	0.69

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 129.3

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.38

Intersection Signal Delay: 70.5

Intersection LOS: E

Intersection Capacity Utilization 84.5%

ICU Level of Service E

Analysis Period (min) 15

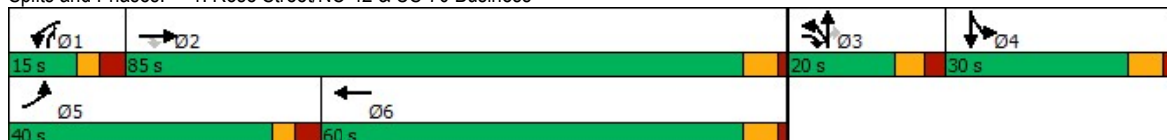
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business



Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	1440	69	0	0	0	0	0	41	4	0	0
Future Vol, veh/h	0	1440	69	0	0	0	0	0	41	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1600	77	0	0	0	0	0	46	4	0	0
Major/Minor	Major1					Minor1			Minor2			
Conflicting Flow All	-	0	0			-	-	839	800	-	-	
Stage 1	-	-	-			-	-	-	0	-	-	
Stage 2	-	-	-			-	-	-	800	-	-	
Critical Hdwy	-	-	-			-	-	6.94	7.54	-	-	
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-			-	-	-	6.54	-	-	
Follow-up Hdwy	-	-	-			-	-	3.32	3.52	-	-	
Pot Cap-1 Maneuver	0	-	-			0	0	309	276	0	0	
Stage 1	0	-	-			0	0	-	-	0	0	
Stage 2	0	-	-			0	0	-	345	0	0	
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-			-	-	309	235	-	-	
Mov Cap-2 Maneuver	-	-	-			-	-	-	235	-	-	
Stage 1	-	-	-			-	-	-	-	-	-	
Stage 2	-	-	-			-	-	-	294	-	-	
Approach	EB					NB			SB			
HCM Control Delay, s	0					18.7			20.6			
HCM LOS						C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	SBLn1								
Capacity (veh/h)	309	-	-	235								
HCM Lane V/C Ratio	0.147	-	-	0.019								
HCM Control Delay (s)	18.7	-	-	20.6								
HCM Lane LOS	C	-	-	C								
HCM 95th %tile Q(veh)	0.5	-	-	0.1								

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	18							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	14	1383	88	4	19	1131	45	43
Future Vol, veh/h	14	1383	88	4	19	1131	45	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	16	1537	98	4	21	1257	50	48
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1257	0	0	1537	1635	0	2248	769
Stage 1	-	-	-	-	-	-	1569	-
Stage 2	-	-	-	-	-	-	679	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	227	-	-	149	393	-	~ 35	344
Stage 1	-	-	-	-	-	-	157	-
Stage 2	-	-	-	-	-	-	465	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver	227	-	-	291	291	-	~ 30	344
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 30	-
Stage 1	-	-	-	-	-	-	146	-
Stage 2	-	-	-	-	-	-	424	-
Approach	EB		WB		NB			
HCM Control Delay, s	0.2		0.4		\$ 550			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	54	227	-	-	291	-		
HCM Lane V/C Ratio	1.811	0.069	-	-	0.088	-		
HCM Control Delay (s)	\$ 550	22	-	-	18.6	-		
HCM Lane LOS	F	C	-	-	C	-		
HCM 95th %tile Q(veh)	9.4	0.2	-	-	0.3	-		
Notes								
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon		

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	1189	26	0
Future Vol, veh/h	0	0	0	1189	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1321	29	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	661	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	661	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	395	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	475	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	395	-	-
Mov Cap-2 Maneuver	-	-	-	395	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	475	-	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	14.8	-	-
HCM LOS	-	-	-	B	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	395	-	-	-	-
HCM Lane V/C Ratio	-	0.073	-	-	-	-
HCM Control Delay (s)	-	14.8	-	-	-	-
HCM Lane LOS	-	B	-	-	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-	-

Queuing and Blocking Report
2025 PM Background

12/06/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	R
Maximum Queue (ft)	750	1805	1801	1789	191	206	381	397	164	152	139	24
Average Queue (ft)	742	1682	1616	1508	26	39	238	252	47	69	46	3
95th Queue (ft)	819	2135	2330	2342	100	122	342	353	126	129	99	16
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)		69	57	11								
Queuing Penalty (veh)		0	0	0								
Storage Bay Dist (ft)	650				200	125			400	150		115
Storage Blk Time (%)	64	73		3		0	33	0		1	0	
Queuing Penalty (veh)	374	426		4		0	11	1		1	0	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB
Directions Served	L	LT
Maximum Queue (ft)	203	351
Average Queue (ft)	99	157
95th Queue (ft)	193	289
Link Distance (ft)		1333
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)	350	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	EB	NB	SB
Directions Served	T	R	L
Maximum Queue (ft)	7	70	31
Average Queue (ft)	0	25	3
95th Queue (ft)	7	54	18
Link Distance (ft)	137	310	126
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2025 PM Background

12/06/2021

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	WB	NB
Directions Served	U	UL	LR
Maximum Queue (ft)	44	58	394
Average Queue (ft)	10	15	246
95th Queue (ft)	34	43	491
Link Distance (ft)			459
Upstream Blk Time (%)			15
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	175	200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	48
Average Queue (ft)	17
95th Queue (ft)	44
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
2025 PM Background

12/06/2021

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 817

2025 Build Traffic Volumes

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	825	78	29	1042	173	113	58	8	253	29	1171
Future Volume (vph)	565	825	78	29	1042	173	113	58	8	253	29	1171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.962	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1702	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.962	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1702	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	628	917	87	32	1158	192	126	64	9	281	32	1301
Shared Lane Traffic (%)										45%		
Lane Group Flow (vph)	628	917	87	32	1158	192	126	64	9	155	158	1301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2025 AM Build
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effct Green (s)	29.4	75.5	94.1	9.1	48.7	131.1	13.5	13.5	22.7	19.0	19.0	131.1
Actuated g/C Ratio	0.22	0.58	0.72	0.07	0.37	1.00	0.10	0.10	0.17	0.14	0.14	1.00
v/c Ratio	0.82	0.45	0.08	0.26	0.88	0.12	0.69	0.33	0.03	0.64	0.64	0.82
Control Delay	59.0	18.5	7.6	69.8	48.5	0.2	80.1	64.8	31.5	67.8	67.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	18.5	7.6	69.8	48.5	0.2	80.1	64.8	31.5	67.8	67.9	4.9
LOS	E	B	A	E	D	A	F	E	C	E	E	A
Approach Delay		33.5			42.3			73.0			17.1	
Approach LOS		C			D			E			B	
Queue Length 50th (ft)	277	259	24	28	505	0	111	54	5	140	143	0
Queue Length 95th (ft)	372	346	49	68	660	0	#214	110	18	231	234	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	938	2212	1158	138	1520	1583	207	218	286	328	332	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.41	0.08	0.23	0.76	0.12	0.61	0.29	0.03	0.47	0.48	0.82

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 131.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 32.2

Intersection LOS: C

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business

 Ø1	 Ø2	 Ø3	 Ø4
15 s	85 s	20 s	30 s
 Ø5	 Ø6		
40 s	60 s		

Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	1086	29	0	0	0	0	0	63	37	0	0
Future Vol, veh/h	0	1086	29	0	0	0	0	0	63	37	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1207	32	0	0	0	0	0	70	41	0	0
Major/Minor	Major1						Minor1			Minor2		
Conflicting Flow All	-	0	0				-	-	620	604	-	-
Stage 1	-	-	-				-	-	-	0	-	-
Stage 2	-	-	-				-	-	-	604	-	-
Critical Hdwy	-	-	-				-	-	6.94	7.54	-	-
Critical Hdwy Stg 1	-	-	-				-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-				-	-	-	6.54	-	-
Follow-up Hdwy	-	-	-				-	-	3.32	3.52	-	-
Pot Cap-1 Maneuver	0	-	-				0	0	431	382	0	0
Stage 1	0	-	-				0	0	-	-	0	0
Stage 2	0	-	-				0	0	-	452	0	0
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-				-	-	431	320	-	-
Mov Cap-2 Maneuver	-	-	-				-	-	-	320	-	-
Stage 1	-	-	-				-	-	-	-	-	-
Stage 2	-	-	-				-	-	-	379	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	0						15			17.9		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1		EBT	EBR		SBLn1						
Capacity (veh/h)	431		-	-		320						
HCM Lane V/C Ratio	0.162		-	-		0.128						
HCM Control Delay (s)	15		-	-		17.9						
HCM Lane LOS	C		-	-		C						
HCM 95th %tile Q(veh)	0.6		-	-		0.4						

Clayton Village Center TIA
3: Site Access 1 & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↑
Traffic Vol, veh/h	1062	128	0	0	0	169
Future Vol, veh/h	1062	128	0	0	0	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1180	142	0	0	0	188
Major/Minor						
	Major1			Minor1		
Conflicting Flow All	0	0		-	661	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Critical Hdwy	-	-		-	6.94	
Critical Hdwy Stg 1	-	-		-	-	
Critical Hdwy Stg 2	-	-		-	-	
Follow-up Hdwy	-	-		-	3.32	
Pot Cap-1 Maneuver	-	-		0	405	
Stage 1	-	-		0	-	
Stage 2	-	-		0	-	
Platoon blocked, %	-	-				
Mov Cap-1 Maneuver	-	-		-	405	
Mov Cap-2 Maneuver	-	-		-	-	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Approach						
	EB			NB		
HCM Control Delay, s	0			21.3		
HCM LOS				C		
Minor Lane/Major Mvmt						
	NBLn1	EBT	EBR			
Capacity (veh/h)	405	-	-			
HCM Lane V/C Ratio	0.464	-	-			
HCM Control Delay (s)	21.3	-	-			
HCM Lane LOS	C	-	-			
HCM 95th %tile Q(veh)	2.4	-	-			

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	33.8							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	149	1048	34	4	32	1100	32	18
Future Vol, veh/h	149	1048	34	4	32	1100	32	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	166	1164	38	4	36	1222	36	20
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1222	0	0	1164	1202	0	2187	582
Stage 1	-	-	-	-	-	-	1496	-
Stage 2	-	-	-	-	-	-	691	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	239	-	-	260	576	-	39	456
Stage 1	-	-	-	-	-	-	172	-
Stage 2	-	-	-	-	-	-	459	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver	239	-	-	503	503	-	~ 11	456
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	-
Stage 1	-	-	-	-	-	-	52	-
Stage 2	-	-	-	-	-	-	422	-
Approach	EB		WB		NB			
HCM Control Delay, s	5.8		0.4		\$ 1483.2			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	17	239	-	-	503	-		
HCM Lane V/C Ratio	3.268	0.693	-	-	0.08	-		
HCM Control Delay (s)	\$ 1483.2	48.3	-	-	12.8	-		
HCM Lane LOS	F	E	-	-	B	-		
HCM 95th %tile Q(veh)	7.6	4.5	-	-	0.3	-		
Notes								
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon		

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	1250	21	0
Future Vol, veh/h	0	0	0	1250	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1389	23	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	695	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	695	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	376	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	456	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	376	-	-
Mov Cap-2 Maneuver	-	-	-	376	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	456	-	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	15.2	-	-
HCM LOS	-	-	-	C	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	376	-	-	-	-
HCM Lane V/C Ratio	-	0.062	-	-	-	-
HCM Control Delay (s)	-	15.2	-	-	-	-
HCM Lane LOS	-	C	-	-	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-	-

Queuing and Blocking Report
2025 AM Build

12/06/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	R
Maximum Queue (ft)	297	322	242	238	68	224	426	429	129	183	150	29
Average Queue (ft)	177	204	142	127	11	47	280	293	16	86	48	5
95th Queue (ft)	268	293	222	217	41	151	398	404	79	153	109	21
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650				200	125			400	150		115
Storage Blk Time (%)				1		0	37	1		2	1	
Queuing Penalty (veh)				1		0	11	2		2	1	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	193	446	135
Average Queue (ft)	97	145	4
95th Queue (ft)	182	319	133
Link Distance (ft)		1333	1333
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	350		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	EB	NB	SB
Directions Served	TR	R	L
Maximum Queue (ft)	2	92	70
Average Queue (ft)	0	34	26
95th Queue (ft)	2	66	57
Link Distance (ft)	137	310	125
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2025 AM Build

12/06/2021

Intersection: 3: Site Access 1 & US-70 Business

Movement	EB	EB	NB
Directions Served	T	TR	R
Maximum Queue (ft)	4	11	118
Average Queue (ft)	0	1	56
95th Queue (ft)	4	7	99
Link Distance (ft)	592	592	163
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	EB	EB	WB	NB
Directions Served	U	T	T	R	UL	LR
Maximum Queue (ft)	241	212	93	2	59	472
Average Queue (ft)	102	16	5	0	20	310
95th Queue (ft)	201	123	72	2	49	553
Link Distance (ft)		429	429			459
Upstream Blk Time (%)						28
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	175			300	200	
Storage Blk Time (%)	7	0	0			
Queuing Penalty (veh)	37	0	0			

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	46
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
2025 AM Build

12/06/2021

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Queuing and Blocking Report
2025 AM Build

12/06/2021

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 53

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1169	1220	137	34	894	276	89	56	7	271	54	985
Future Volume (vph)	1169	1220	137	34	894	276	89	56	7	271	54	985
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	650		200	125		400	150		115	350		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1711	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.967	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1681	1711	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			25			45	
Link Distance (ft)		1793			931			480			1391	
Travel Time (s)		27.2			14.1			13.1			21.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1299	1356	152	38	993	307	99	62	8	301	60	1094
Shared Lane Traffic (%)										41%		
Lane Group Flow (vph)	1299	1356	152	38	993	307	99	62	8	178	183	1094
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			12			24	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Split	NA	pm+ov	Split	NA	Free
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2			Free			3			Free
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0	7.0	7.0	20.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	26.0	14.0	14.0	26.0		14.0	14.0	14.0	14.0	14.0	
Total Split (s)	40.0	85.0	20.0	15.0	60.0		20.0	20.0	15.0	30.0	30.0	
Total Split (%)	26.7%	56.7%	13.3%	10.0%	40.0%		13.3%	13.3%	10.0%	20.0%	20.0%	
Maximum Green (s)	33.7	79.1	13.7	8.6	54.2		13.7	13.7	8.6	23.5	23.5	
Yellow Time (s)	3.0	4.5	3.8	3.0	4.5		3.8	3.8	3.0	4.5	4.5	
All-Red Time (s)	3.3	1.4	2.5	3.4	1.3		2.5	2.5	3.4	2.0	2.0	
Lost Time Adjust (s)	-1.3	-0.9	-1.3	-1.4	-0.8		-1.3	-1.3	-1.4	-1.5	-1.5	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	3.0	3.0	
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	3.0	3.0	
Time Before Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	

2025 PM Build
Timmons Group

Synchro 10 Report
Page 1

Clayton Village Center TIA
1: Rose Street/NC-42 & US-70 Business

12/06/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	45.0	0.0	0.0	45.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effct Green (s)	35.5	72.7	90.1	9.2	43.2	131.3	12.3	12.3	21.5	20.1	20.1	131.3
Actuated g/C Ratio	0.27	0.55	0.69	0.07	0.33	1.00	0.09	0.09	0.16	0.15	0.15	1.00
v/c Ratio	1.40	0.69	0.14	0.31	0.85	0.19	0.60	0.36	0.03	0.70	0.70	0.69
Control Delay	223.5	25.4	8.8	70.0	49.6	0.3	75.2	65.1	30.3	69.1	69.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	223.5	25.4	8.8	70.0	49.6	0.3	75.2	65.1	30.3	69.1	69.3	2.5
LOS	F	C	A	E	D	A	E	E	C	E	E	A
Approach Delay		116.1			38.9			69.3			19.1	
Approach LOS		F			D			E			B	
Queue Length 50th (ft)	~772	458	45	32	420	0	82	50	4	152	156	0
Queue Length 95th (ft)	#1076	600	81	77	534	0	159	108	17	264	270	0
Internal Link Dist (ft)		1713			851			400			1311	
Turn Bay Length (ft)	650		200	125		400	150		115	350		
Base Capacity (vph)	927	2185	1120	136	1502	1583	205	215	270	324	330	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.40	0.62	0.14	0.28	0.66	0.19	0.48	0.29	0.03	0.55	0.55	0.69

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 131.3

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.40

Intersection Signal Delay: 72.4

Intersection LOS: E

Intersection Capacity Utilization 86.2%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rose Street/NC-42 & US-70 Business



Clayton Village Center TIA
2: Wildwood Drive/U-Turn 1 EB & US-70 Business

12/06/2021

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑							↑	↑		
Traffic Vol, veh/h	0	1528	69	0	0	0	0	0	41	28	0	0
Future Vol, veh/h	0	1528	69	0	0	0	0	0	41	28	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1698	77	0	0	0	0	0	46	31	0	0
Major/Minor	Major1					Minor1				Minor2		
Conflicting Flow All	-	0	0			-	-	888	849	-	-	
Stage 1	-	-	-			-	-	-	0	-	-	
Stage 2	-	-	-			-	-	-	849	-	-	
Critical Hdwy	-	-	-			-	-	6.94	7.54	-	-	
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-			-	-	-	6.54	-	-	
Follow-up Hdwy	-	-	-			-	-	3.32	3.52	-	-	
Pot Cap-1 Maneuver	0	-	-			0	0	287	254	0	0	
Stage 1	0	-	-			0	0	-	-	0	0	
Stage 2	0	-	-			0	0	-	322	0	0	
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-			-	-	287	214	-	-	
Mov Cap-2 Maneuver	-	-	-			-	-	-	214	-	-	
Stage 1	-	-	-			-	-	-	-	-	-	
Stage 2	-	-	-			-	-	-	271	-	-	
Approach	EB					NB				SB		
HCM Control Delay, s	0					19.9				24.7		
HCM LOS						C				C		
Minor Lane/Major Mvmt	NBLn1		EBT	EBR SBLn1								
Capacity (veh/h)	287		-	- 214								
HCM Lane V/C Ratio	0.159		-	- 0.145								
HCM Control Delay (s)	19.9		-	- 24.7								
HCM Lane LOS	C		-	- C								
HCM 95th %tile Q(veh)	0.6		-	- 0.5								

Clayton Village Center TIA
3: Site Access 1 & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↑
Traffic Vol, veh/h	1476	124	0	0	0	86
Future Vol, veh/h	1476	124	0	0	0	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1640	138	0	0	0	96
Major/Minor						
	Major1			Minor1		
Conflicting Flow All	0	0		-	889	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Critical Hdwy	-	-		-	6.94	
Critical Hdwy Stg 1	-	-		-	-	
Critical Hdwy Stg 2	-	-		-	-	
Follow-up Hdwy	-	-		-	3.32	
Pot Cap-1 Maneuver	-	-		0	286	
Stage 1	-	-		0	-	
Stage 2	-	-		0	-	
Platoon blocked, %	-	-				
Mov Cap-1 Maneuver	-	-		-	286	
Mov Cap-2 Maneuver	-	-		-	-	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Approach						
	EB			NB		
HCM Control Delay, s	0			23.8		
HCM LOS				C		
Minor Lane/Major Mvmt						
	NBLn1	EBT	EBR			
Capacity (veh/h)	286	-	-			
HCM Lane V/C Ratio	0.334	-	-			
HCM Control Delay (s)	23.8	-	-			
HCM Lane LOS	C	-	-			
HCM 95th %tile Q(veh)	1.4	-	-			

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	41.1							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	68	1406	88	4	19	1158	45	43
Future Vol, veh/h	68	1406	88	4	19	1158	45	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	175	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	76	1562	98	4	21	1287	50	48

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1287	0	0	1562	1660	0	2408	781
Stage 1	-	-	-	-	-	-	1714	-
Stage 2	-	-	-	-	-	-	694	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	217	-	-	144	384	-	~ 27	338
Stage 1	-	-	-	-	-	-	131	-
Stage 2	-	-	-	-	-	-	457	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	217	-	-	283	283	-	~ 16	338
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 16	-
Stage 1	-	-	-	-	-	-	85	-
Stage 2	-	-	-	-	-	-	415	-

Approach	EB	WB	NB
HCM Control Delay, s	1.3	0.4	\$ 1292.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	30	217	-	-	283	-
HCM Lane V/C Ratio	3.259	0.348	-	-	0.09	-
HCM Control Delay (s)	\$ 1292.4	30.2	-	-	19	-
HCM Lane LOS	F	D	-	-	C	-
HCM 95th %tile Q(veh)	11.6	1.5	-	-	0.3	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Clayton Village Center TIA
201: U-Turn 1 WB & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑	↑	
Traffic Vol, veh/h	0	0	0	1243	26	0
Future Vol, veh/h	0	0	0	1243	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1381	29	0
Major/Minor	Major2		Minor1			
Conflicting Flow All	-	-	-	691	-	-
Stage 1	-	-	-	0	-	-
Stage 2	-	-	-	691	-	-
Critical Hdwy	-	-	-	6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	3.52	-	-
Pot Cap-1 Maneuver	-	-	0	-	378	0
Stage 1	-	-	0	-	-	0
Stage 2	-	-	0	-	459	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	378	-	-
Mov Cap-2 Maneuver	-	-	-	378	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	459	-	-
Approach	WB		NB			
HCM Control Delay, s	-	0	-	15.3	-	-
HCM LOS	-	-	-	C	-	-
Minor Lane/Major Mvmt	NBLn1		WBT			
Capacity (veh/h)	-	378	-	-	-	-
HCM Lane V/C Ratio	-	0.076	-	-	-	-
HCM Control Delay (s)	-	15.3	-	-	-	-
HCM Lane LOS	-	C	-	-	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-	-

Queuing and Blocking Report
2025 PM Build

12/06/2021

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	R
Maximum Queue (ft)	750	1798	1795	1784	142	213	397	390	169	156	135	22
Average Queue (ft)	745	1680	1620	1520	25	48	247	261	49	73	47	4
95th Queue (ft)	787	2096	2293	2321	89	143	360	366	127	134	102	16
Link Distance (ft)		1752	1752	1752			845	845			409	
Upstream Blk Time (%)		67	55	11								
Queuing Penalty (veh)		0	0	0								
Storage Bay Dist (ft)	650				200	125			400	150		115
Storage Blk Time (%)	65	75		5		0	34	0		1	1	
Queuing Penalty (veh)	379	436		7		0	11	1		1	1	

Intersection: 1: Rose Street/NC-42 & US-70 Business

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	220	253	135
Average Queue (ft)	116	164	5
95th Queue (ft)	205	231	133
Link Distance (ft)		1333	1333
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	350		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Wildwood Drive/U-Turn 1 EB & US-70 Business

Movement	EB	NB	SB
Directions Served	T	R	L
Maximum Queue (ft)	3	68	59
Average Queue (ft)	0	24	19
95th Queue (ft)	3	52	49
Link Distance (ft)	137	310	125
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2025 PM Build

12/06/2021

Intersection: 3: Site Access 1 & US-70 Business

Movement	EB	NB
Directions Served	TR	R
Maximum Queue (ft)	5	84
Average Queue (ft)	0	40
95th Queue (ft)	4	70
Link Distance (ft)	592	163
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	WB	NB
Directions Served	U	R	UL	LR
Maximum Queue (ft)	96	4	45	483
Average Queue (ft)	35	0	13	430
95th Queue (ft)	72	3	36	554
Link Distance (ft)				459
Upstream Blk Time (%)				68
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	175	300	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 201: U-Turn 1 WB & US-70 Business

Movement	NB
Directions Served	L
Maximum Queue (ft)	43
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
2025 PM Build

12/06/2021

Intersection: 202: US-70 Business & U-Turn 1 WB

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 203: U-Turn 1 EB & US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 204: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Queuing and Blocking Report
2025 PM Build

12/06/2021

Intersection: 501: US-70 Business

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 836

2025 Build + Improvements Traffic Volumes

Clayton Village Center TIA
3: Site Access 1 & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑				↑
Traffic Vol, veh/h	1062	128	0	0	0	169
Future Vol, veh/h	1062	128	0	0	0	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1180	142	0	0	0	188
Major/Minor						
	Major1			Minor1		
Conflicting Flow All	0	0		-	590	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Critical Hdwy	-	-		-	6.94	
Critical Hdwy Stg 1	-	-		-	-	
Critical Hdwy Stg 2	-	-		-	-	
Follow-up Hdwy	-	-		-	3.32	
Pot Cap-1 Maneuver	-	-		0	451	
Stage 1	-	-		0	-	
Stage 2	-	-		0	-	
Platoon blocked, %	-	-				
Mov Cap-1 Maneuver	-	-		-	451	
Mov Cap-2 Maneuver	-	-		-	-	
Stage 1	-	-		-	-	
Stage 2	-	-		-	-	
Approach						
	EB			NB		
HCM Control Delay, s	0			18.6		
HCM LOS				C		
Minor Lane/Major Mvmt						
	NBLn1	EBT	EBR			
Capacity (veh/h)	451	-	-			
HCM Lane V/C Ratio	0.416	-	-			
HCM Control Delay (s)	18.6	-	-			
HCM Lane LOS	C	-	-			
HCM 95th %tile Q(veh)	2	-	-			

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	33.8							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑	↗		↖	↑↑	↘	
Traffic Vol, veh/h	149	1048	34	4	32	1100	32	18
Future Vol, veh/h	149	1048	34	4	32	1100	32	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	300	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	166	1164	38	4	36	1222	36	20
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1222	0	0	1164	1202	0	2187	582
Stage 1	-	-	-	-	-	-	1496	-
Stage 2	-	-	-	-	-	-	691	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	239	-	-	260	576	-	39	456
Stage 1	-	-	-	-	-	-	172	-
Stage 2	-	-	-	-	-	-	459	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver	239	-	-	503	503	-	~ 11	456
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	-
Stage 1	-	-	-	-	-	-	52	-
Stage 2	-	-	-	-	-	-	422	-
Approach	EB		WB		NB			
HCM Control Delay, s	5.8		0.4		\$ 1483.2			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	17	239	-	-	503	-		
HCM Lane V/C Ratio	3.268	0.693	-	-	0.08	-		
HCM Control Delay (s)	\$ 1483.2	48.3	-	-	12.8	-		
HCM Lane LOS	F	E	-	-	B	-		
HCM 95th %tile Q(veh)	7.6	4.5	-	-	0.3	-		
Notes								
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon								

Queuing and Blocking Report
2025 AM Build + Improvements

12/06/2021

Intersection: 3: Site Access 1 & US-70 Business

Movement	NB
Directions Served	R
Maximum Queue (ft)	125
Average Queue (ft)	51
95th Queue (ft)	94
Link Distance (ft)	149
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	EB	WB	NB
Directions Served	U	T	T	UL	LR
Maximum Queue (ft)	253	68	43	48	464
Average Queue (ft)	108	9	7	17	326
95th Queue (ft)	218	104	91	42	568
Link Distance (ft)		429	429		459
Upstream Blk Time (%)		0	0		38
Queuing Penalty (veh)		1	0		0
Storage Bay Dist (ft)	300			200	
Storage Blk Time (%)	1	0	0		
Queuing Penalty (veh)	7	0	0		

Zone Summary

Zone wide Queuing Penalty: 9

Clayton Village Center TIA
3: Site Access 1 & US-70 Business

12/06/2021

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑				↑
Traffic Vol, veh/h	1476	124	0	0	0	86
Future Vol, veh/h	1476	124	0	0	0	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	0
Veh in Median Storage, #	0	-	-	16983	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1640	138	0	0	0	96
Major/Minor	Major1		Minor1			
Conflicting Flow All	0	0	-	-	-	820
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	-	-	0	318
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	318
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB			
HCM Control Delay, s	0				21.1	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR			
Capacity (veh/h)	318	-	-			
HCM Lane V/C Ratio	0.3	-	-			
HCM Control Delay (s)	21.1	-	-			
HCM Lane LOS	C	-	-			
HCM 95th %tile Q(veh)	1.2	-	-			

Clayton Village Center TIA
4: Hardee Lane & US-70 Business

12/06/2021

Intersection								
Int Delay, s/veh	41.1							
Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Vol, veh/h	68	1406	88	4	19	1158	45	43
Future Vol, veh/h	68	1406	88	4	19	1158	45	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	300	-	300	-	200	-	0	-
Veh in Median Storage, #	-	0	-	-	-	0	0	-
Grade, %	-	0	-	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	76	1562	98	4	21	1287	50	48
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	1287	0	0	1562	1660	0	2408	781
Stage 1	-	-	-	-	-	-	1714	-
Stage 2	-	-	-	-	-	-	694	-
Critical Hdwy	6.44	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	217	-	-	144	384	-	~ 27	338
Stage 1	-	-	-	-	-	-	131	-
Stage 2	-	-	-	-	-	-	457	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver	217	-	-	283	283	-	~ 16	338
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 16	-
Stage 1	-	-	-	-	-	-	85	-
Stage 2	-	-	-	-	-	-	415	-
Approach	EB		WB		NB			
HCM Control Delay, s	1.3		0.4		\$ 1292.4			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT		
Capacity (veh/h)	30	217	-	-	283	-		
HCM Lane V/C Ratio	3.259	0.348	-	-	0.09	-		
HCM Control Delay (s)	\$ 1292.4	30.2	-	-	19	-		
HCM Lane LOS	F	D	-	-	C	-		
HCM 95th %tile Q(veh)	11.6	1.5	-	-	0.3	-		
Notes								
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon		

Queuing and Blocking Report
2025 PM Build + Improvements

12/06/2021

Intersection: 3: Site Access 1 & US-70 Business

Movement	NB
Directions Served	R
Maximum Queue (ft)	77
Average Queue (ft)	33
95th Queue (ft)	63
Link Distance (ft)	149
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Hardee Lane & US-70 Business

Movement	EB	EB	WB	NB
Directions Served	U	R	UL	LR
Maximum Queue (ft)	86	14	53	476
Average Queue (ft)	33	1	14	381
95th Queue (ft)	72	7	41	596
Link Distance (ft)				459
Upstream Blk Time (%)				58
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	300	300	200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

Appendix E – Approved Developments

Timmons Group would like to scope the Clayton Village Center Development TIA (update), located in Clayton, NC. This study will be an update to a previously submitted TIA sealed 10/30/2019. Per the attached conceptual site plan, the proposed development will include two right-in/right-out site access connections to US-70 Business (original study included one site access connection to US-70 Business). The updated study will include 5,100 SF of commercial development and 324 apartment units (original study included 15,950 SF of commercial development and 155 apartment units). It is assumed that the project study area will not change, but new peak period turning movement traffic counts will be collected at existing project study area intersections. Please let me know if you would like to meet to discuss the subject project or if this email will suffice.

Our scoping assumptions include the following:

- Study Area Intersections:
 - Site Access 1 / US-70 Business (Right-In-Right-Out)
 - Site Access 2 / US-70 Business (Right-In-Right-Out)
 - NC-42 / Rose Street / US-70 Business
 - Wildwood Drive / US-70 Business
 - Hardee Lane / US-70 Business
- Growth Rate:
 - 3.0%
 - Differs from original TIA
 - Calculated using published US-70 Business and NC-42 AADTs
- Approved Area Developments:
 - Buckhorn Branch (Assumed to be built by 2022)
 - Others?
- STIP Projects:
 - U-6223
 - 2022 construction
 - Will connect Rose Street with SR 1563 (Little Creek Church Road)
 - Are future analyses required due to this STIP project?
- Build-Out Year:
 - 2025

I did not include Congestion Management on this email, but will be happy to CC them as needed.

Please do not hesitate to contact me with any questions.

Thanks!
Jeff

Jeff Hochanadel, PE, PTOE

North Carolina Transportation Group Leader

TIMMONS GROUP | www.timmons.com

5410 Trinity Rd, Suite 102 | Raleigh, NC 27607

Office: 919.866.4511 | Fax: 919.859.5663

Cell: 919.426.8405

jeff.hochanadel@timmons.com

Your Vision Achieved Through Ours

To send me files greater than 20MB [click here](#)

Cc: sclawhorn@ncdot.gov; Joshua Baird <jbaird@townofclaytonnc.org>; robert@bartletteng.com; Joe.Magnuson@timmons.com; Ben Howell <bhowell@townofclaytonnc.org>

Subject: RE: Clayton Village Center TIA

Jeff – I am comfortable leaving the study intersections the same and using the 3% growth rate as proposed. In addition to Buckhorn Branch (Build-Out is 2023), the remaining build-out of The Shoppes at Glen Laurel should be included since its near the intersection of NC 42 and US 70 Business. I will work on getting the remain site plans and details to you to input in the background traffic.

Let me know if you have any other questions.

Thanks,

Jonathan K. Jacobs, PE

Town of Clayton
Assistant Town Engineer
111 E. Second Street
Clayton, NC 27520
(919) 359-1297
ClaytonNC.org



Please note that email sent to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Jeff Hochanadel <Jeff.Hochanadel@timmons.com>

Sent: Monday, September 20, 2021 7:29 AM

To: Lawhorn, Samuel C <sclawhorn@ncdot.gov>; Joshua Baird <jbaird@townofclaytonnc.org>

Cc: Robert Bartlett <robert@bartletteng.com>; Joe Magnuson <Joe.Magnuson@timmons.com>

Subject: Clayton Village Center TIA

Be Advised: This email originated from outside of the Town of Clayton's network. Do not click links or open attachments unless you recognize the sender and know the content is safe.

All,

Joe Magnuson

From: Jonathan Jacobs <jjacobs@townofclaytonnc.org>
Sent: Tuesday, September 21, 2021 1:16 PM
To: Jeff Hochanadel
Cc: sclawhorn@ncdot.gov; Joshua Baird; robert@bartletteng.com; Joe Magnuson; Ben Howell
Subject: RE: Clayton Village Center TIA
Attachments: Master Plan from Shoppes at Glen Laurel Master Plan Modification Approved Plans 2020-39-SD.pdf; Updated TIA Addendum - Glen Laurel Mixed Use with Attachments_Optimized.pdf

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Jeff – I have attached the approved master plan for Shoppes at Glen Laurel. Lot 1, 2, 3, 4, and 6 have been developed and can be excluded from background traffic.

Let me know if you need anything else.

Thanks,

Jonathan K. Jacobs, PE

Town of Clayton
Assistant Town Engineer
111 E. Second Street
Clayton, NC 27520
(919) 359-1297
ClaytonNC.org

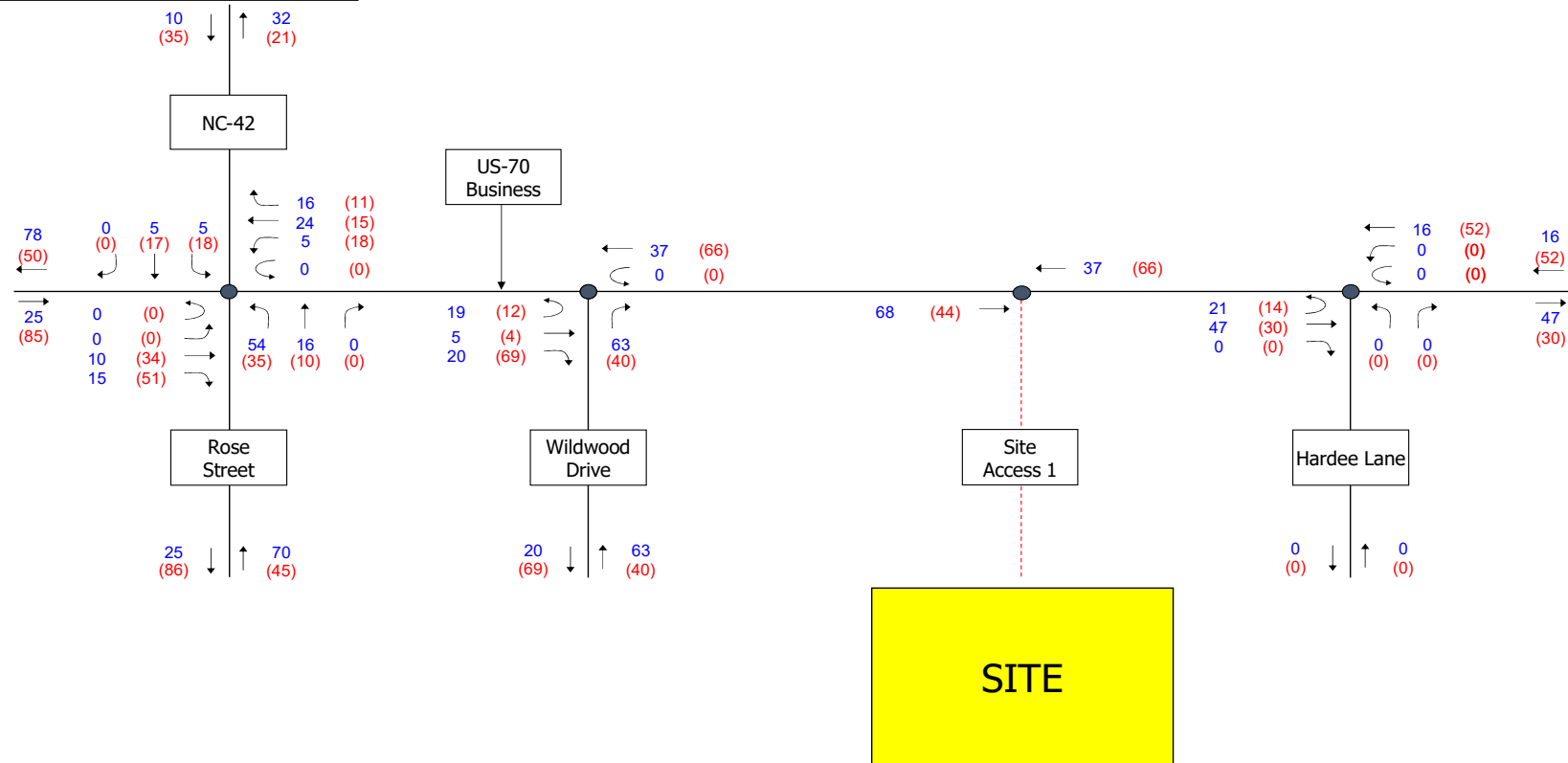
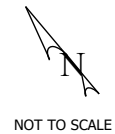


Please note that email sent to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Jonathan Jacobs
Sent: Monday, September 20, 2021 8:46 AM
To: Jeff.Hochanadel@timmons.com

LEGEND:

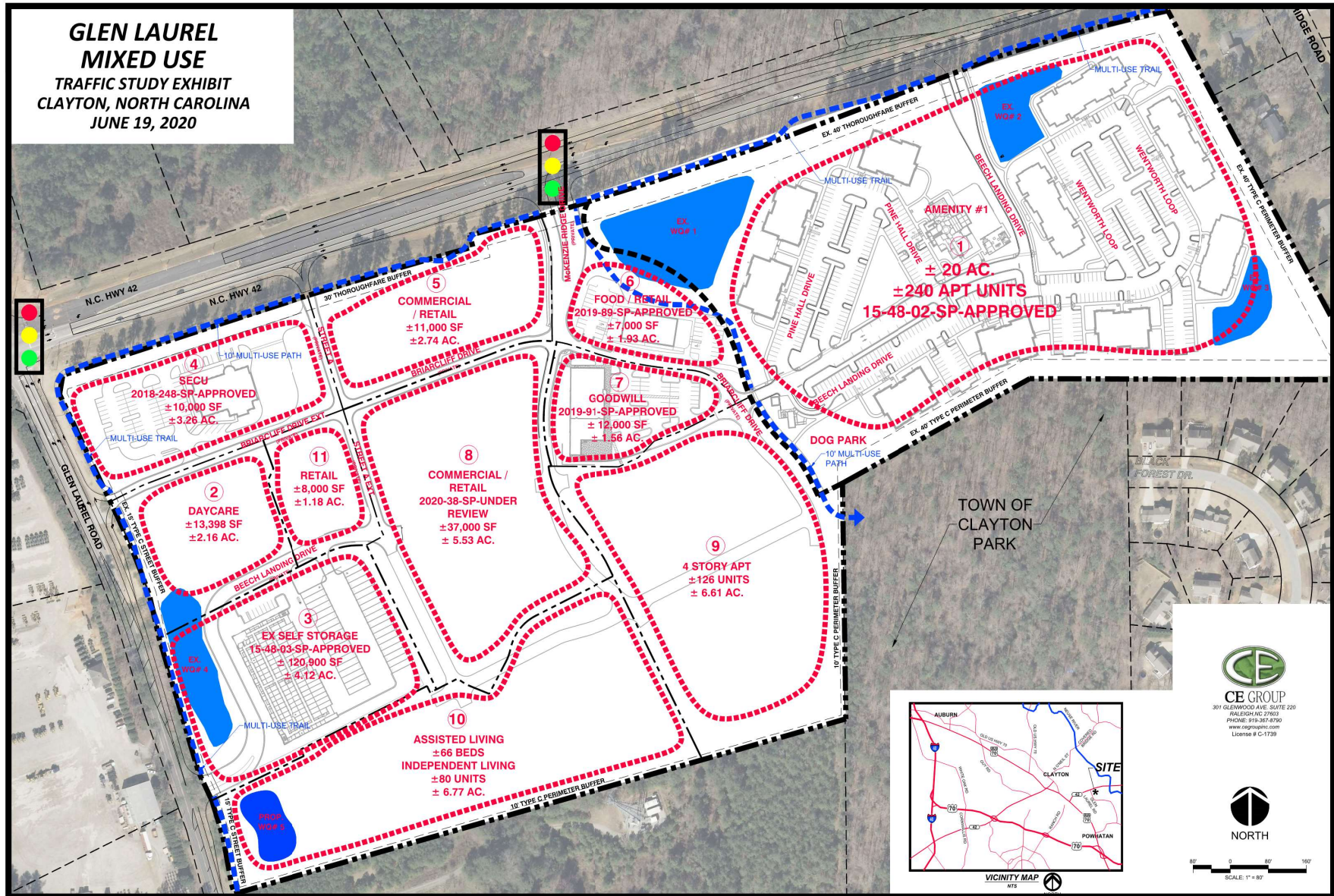
- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis**
Buckhorn Branch - Approved Development Trip Distribution
Volumes

Figure F-1

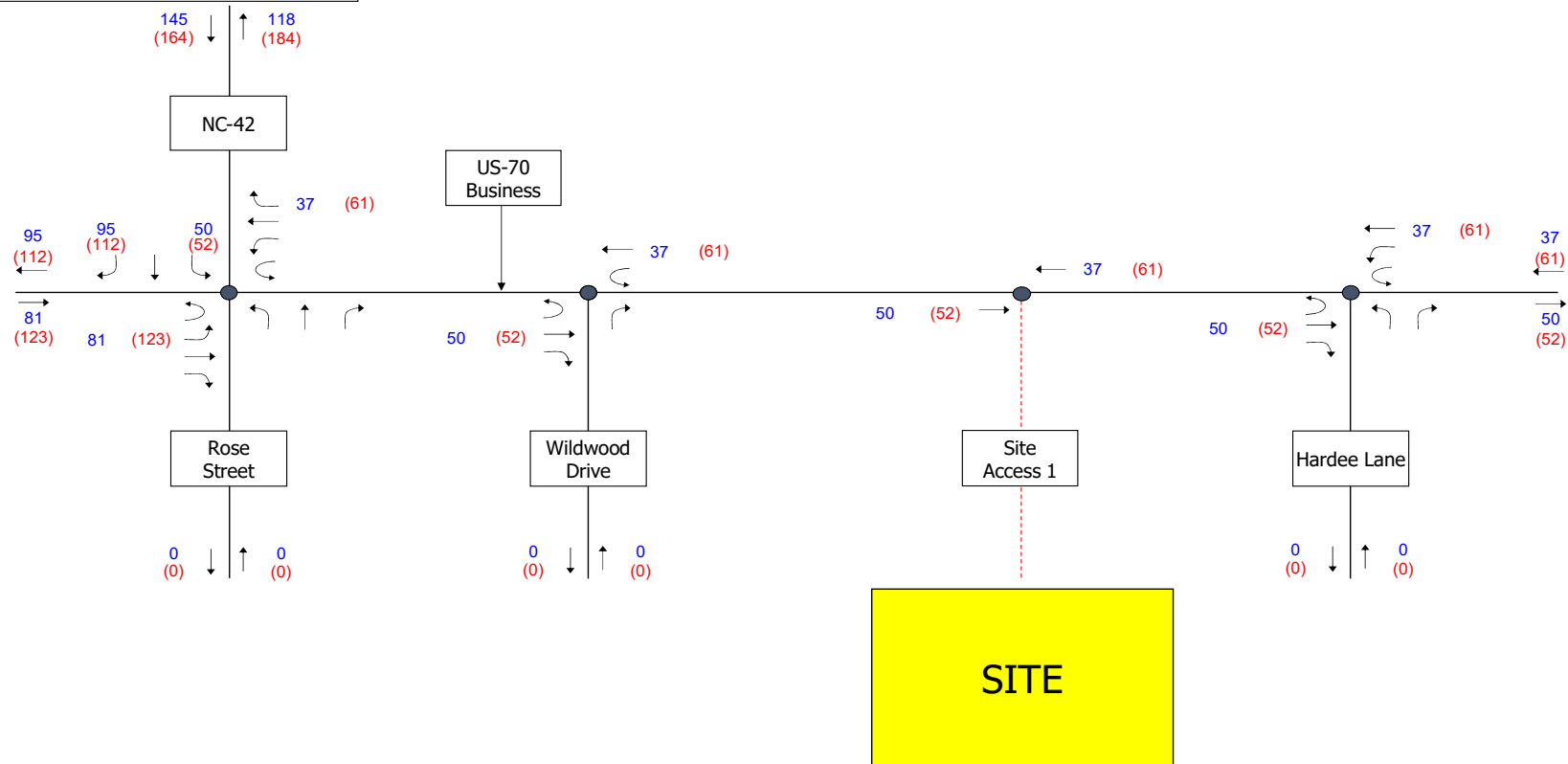
**GLEN LAUREL
MIXED USE**
TRAFFIC STUDY EXHIBIT
CLAYTON, NORTH CAROLINA
JUNE 19, 2020



Shoppes at Glen Laurel Trip Generation								
Original Trip Generation								
Trip Gen Table	Intensity	ADT	AM			PM		
			Entering	Exiting	Total	Entering	Exiting	Total
LUC 220	366	2800	38	126	164	119	68	187
LUC 912	10,000	1000	55	40	95	102	103	205
LUC 820	75,000	5000	117	72	189	211	228	439
LUC 565	14,000	670	82	72	154	73	83	156
LUC 154	120,900	190	7	5	12	10	11	21
LUC 253	80	170	4	2	6	8	8	16
LUC 254	66	180	8	4	12	10	12	22
Subtotal	-	10010	311	321	632	533	513	1046
Internal Capture %		-	1%			2%		
Internal Capture		-	3	3	6	10	10	20
Subtotal		10010	308	318	626	523	503	1026
LUC 820 Pass By %		-	0%			34%		
LUC 820 Pass By		-	-	-	-	74	74	148
LUC 912 Pass By %		-	29%			35%		
LUC 912 Pass By		-	14	14	28	35	35	70
Total Pass By		-	14	14	28	109	109	218
Total External		10010	294	304	598	414	394	808
Updated Trip Generation (Excluding Land Uses Already Constructed)								
Trip Gen Table	Intensity	ADT	AM			PM		
			Entering	Exiting	Total	Entering	Exiting	Total
LUC 220	126	964	13	43	56	41	23	64
LUC 912								
LUC 820	68,000	4533	106	65	171	191	207	398
LUC 565								
LUC 154								
LUC 253	80	170	4	2	6	8	8	16
LUC 254	66	180	8	4	12	10	12	22
Subtotal	-	5847	131	114	245	250	250	500
Internal Capture %		-	1%			2%		
Internal Capture		-	1	1	2	5	5	10
Subtotal		5847	130	113	243	245	245	490
LUC 820 Pass By %		-	0%			34%		
LUC 820 Pass By		-	-	-	-	66	66	132
LUC 912 Pass By %								
LUC 912 Pass By								
Total Pass By		-	0	0	0	66	66	132
Total External		5847	130	113	243	179	179	358
Percent Reduction		42.00%	56.00%	63.00%	59.00%	57.00%	55.00%	56.00%

LEGEND:

- Existing Road
- Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

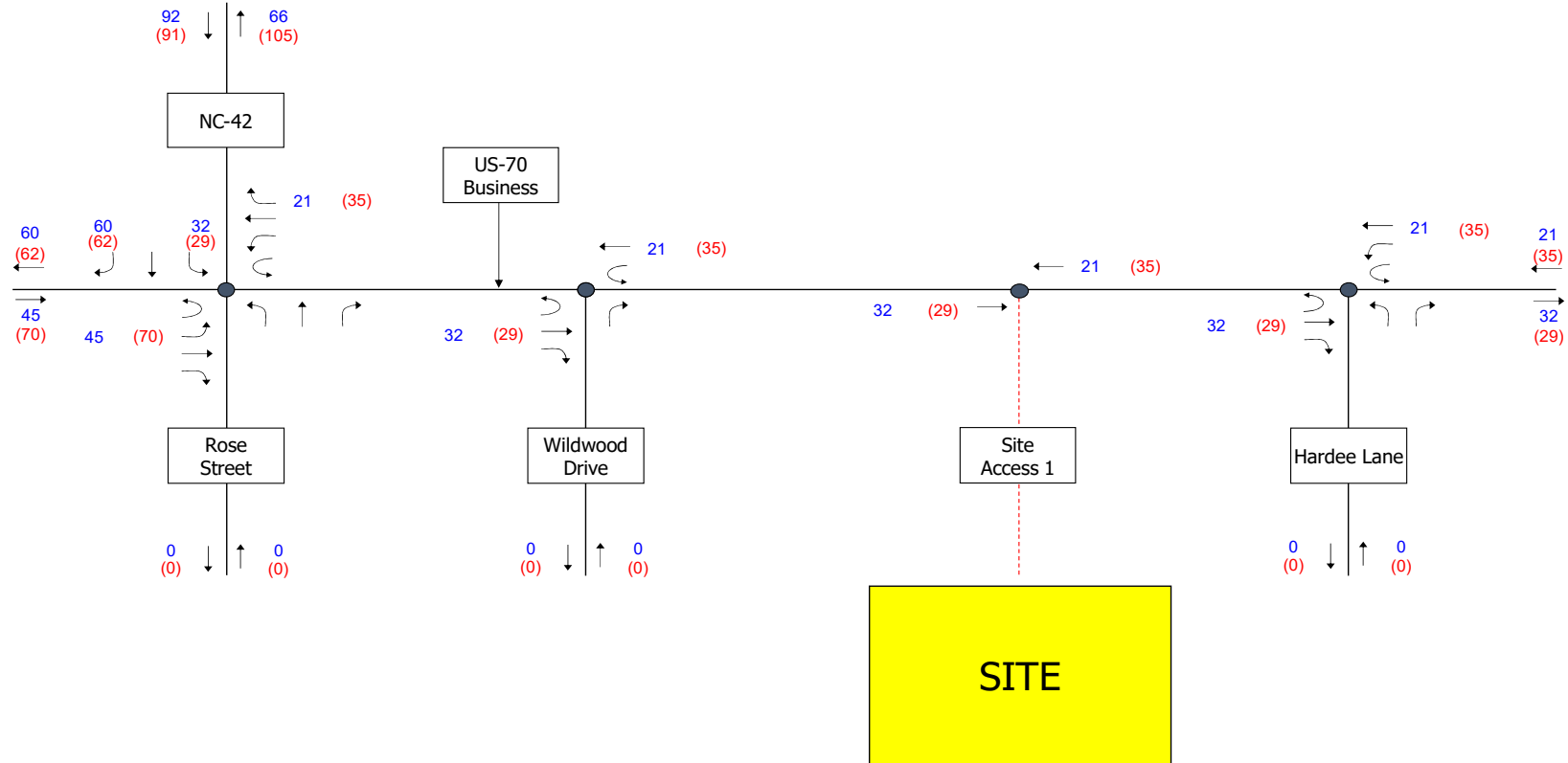
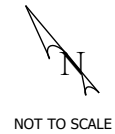


**Clayton Village Center
Traffic Impact Analysis**
Shoppes at Glen Laurel - Original Approved Development Trip
Distribution Volumes

Figure F-2a

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Clayton Village Center
Traffic Impact Analysis**
Shoppes at Glen Laurel - Adjusted Approved Development
Trip Distribution Volumes

Figure F-2b

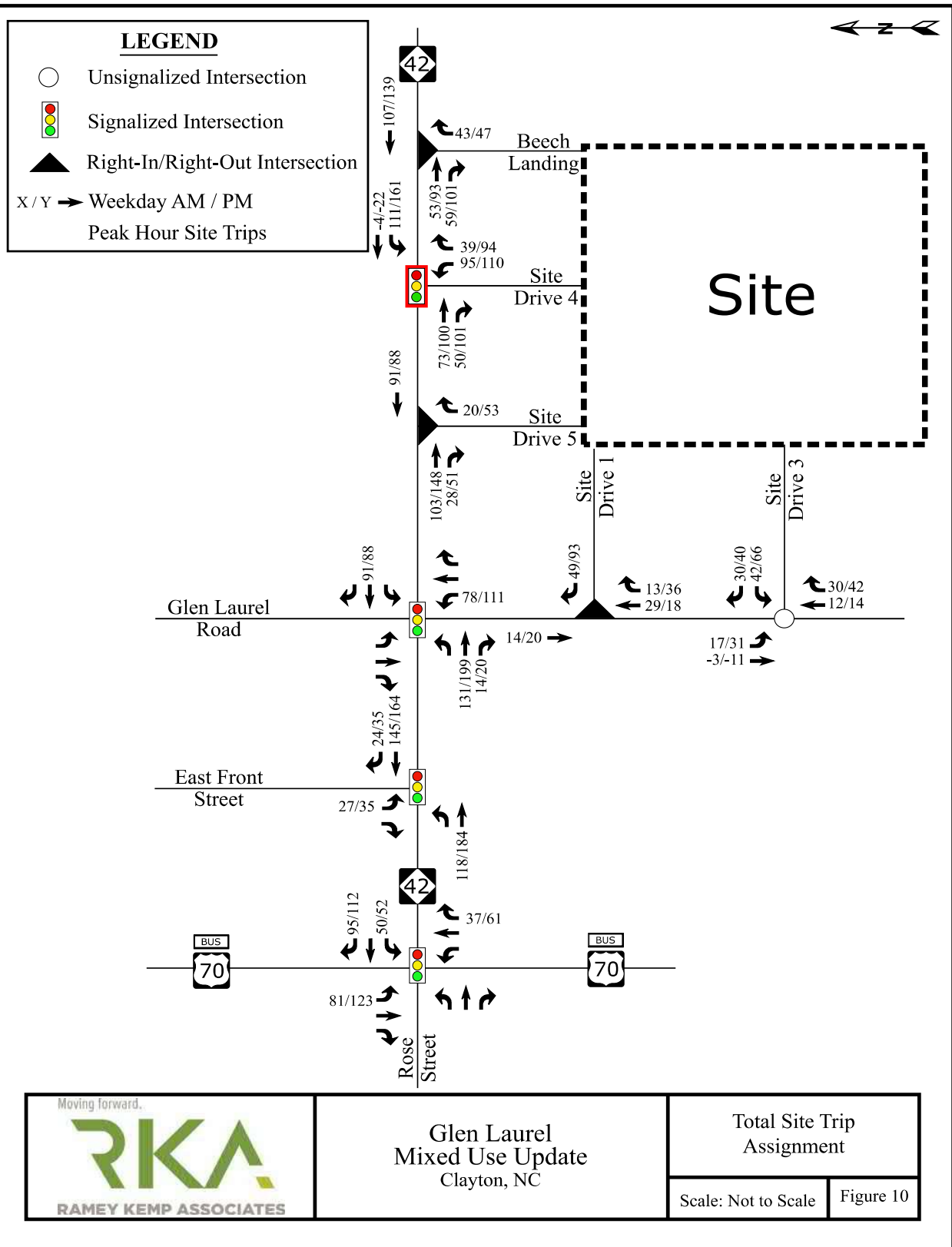
Trip Generation

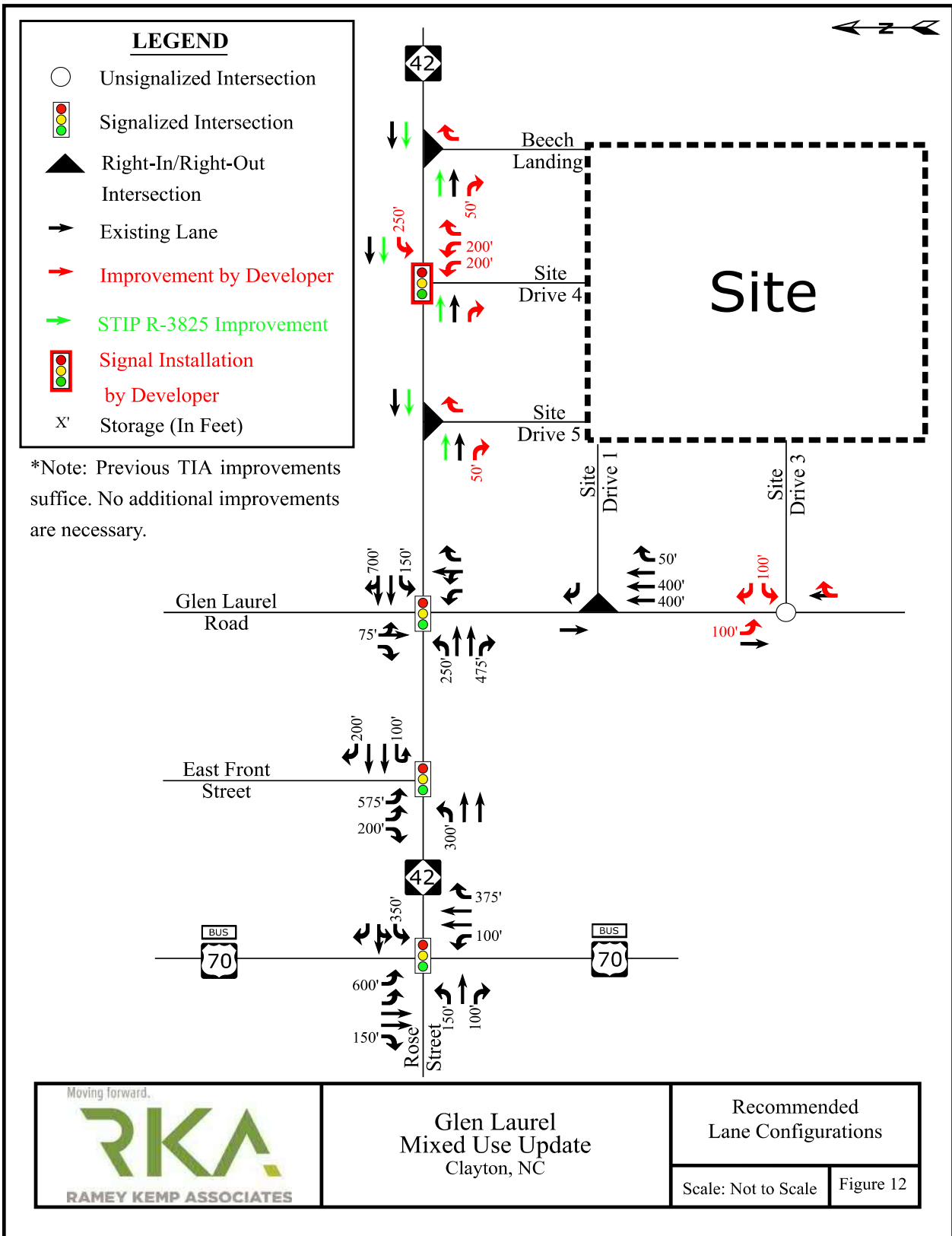
The trip generation has been revised to include the following changes: low-rise multi-family units increases from 360 to 366 and congregate care facility increases from 77 to 80 units. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 10th Edition. Table 1 provides a summary of the trip generation potential for the site.

Table 1: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multi-Family (Low-Rise) Housing (220)	366 dwellings	2,800	38	126	119	68
Bank (912)	10,000 sq. ft.	1,000	55	40	102	103
Shopping Center (820)	75,000 sq. ft.	5,000	117	72	211	228
Day Care (565)	14,000 sq. ft.	670	82	72	73	83
Mini-Warehouse (151)	120,900 sq. ft.	190	7	5	10	11
Congregate Care Facility (253)	80 units	170	4	2	8	8
Assisted Living (254)	66 beds	180	8	4	10	12
Total Trips		10,010	311	321	533	513
<i>Internal Capture (1% AM, 2% PM)</i>			-3	-3	-10	-10
Total External Trips			308	318	523	503
<i>Pass-By Trips: Shopping Center (34% PM)</i>			--	--	-74	-74
<i>Pass-By Trips: Drive-In Bank (29% AM, 35% PM)</i>			-14	-14	-35	-35
Total Primary Trips			294	304	414	394

It is estimated that the proposed development will generate approximately 10,010 total site trips on the roadway network during a typical 24-hour weekday period. The updated trip generation produces approximately 590 less daily trips from the previous one submitted in April 2020. Of the daily traffic volume, it is anticipated that 598 trips (294 entering and 304 exiting) will occur during the AM peak hour and 808 (414 entering and 394 exiting) will occur during the PM peak hour. The updated trip generation produces 3 more





Appendix F – NCDOT Nomographs

Warrant for Left and Right-Turn Lanes **AT GRADE, UNSIGNALIZED INTERSECTIONS**

AM Peak Hour

VR = 128

V = 100

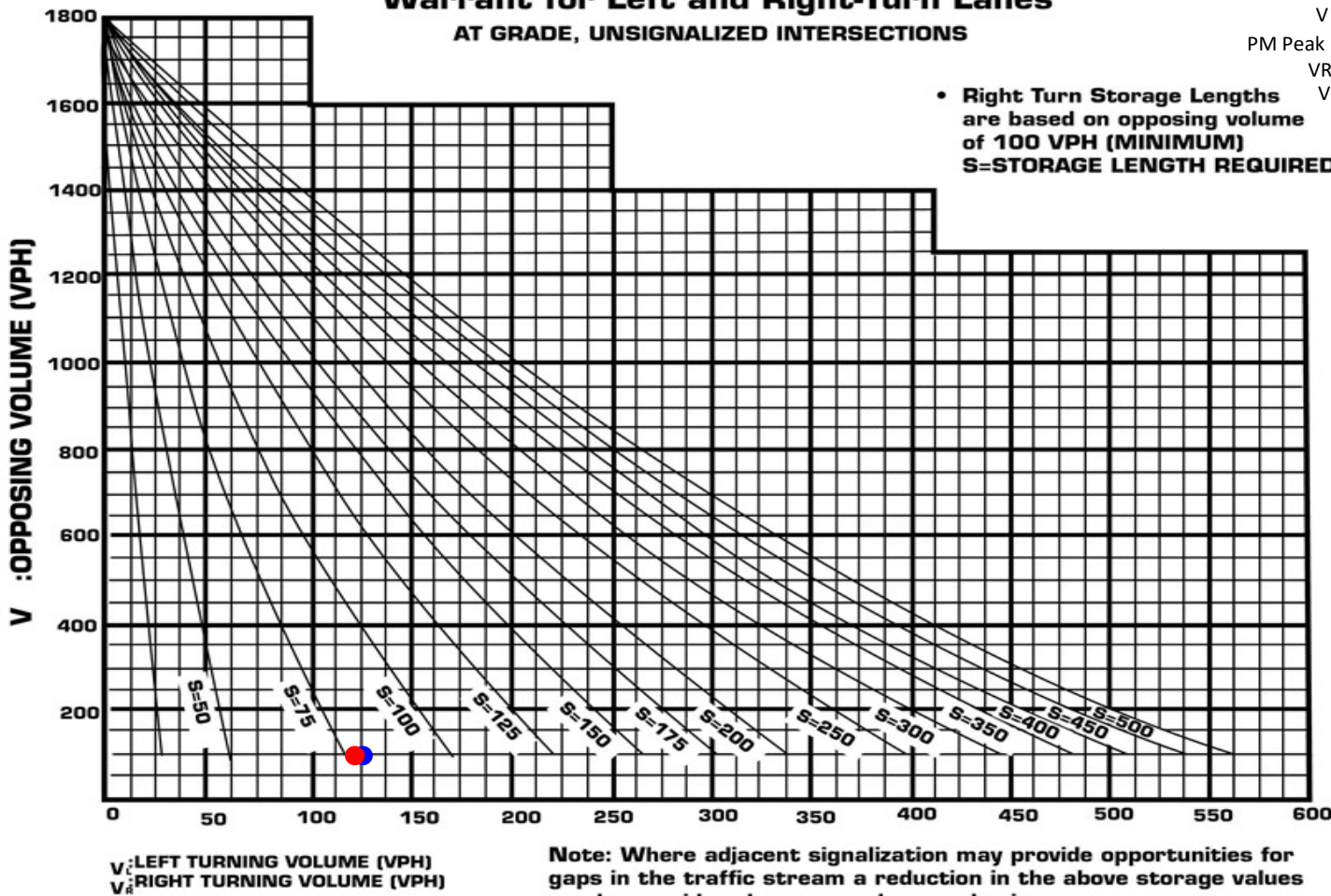
PM Peak Hour

VR = 124

V = 100

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED

Policy On Street And Driveway Access to North Carolina Highways



US-70 Business / Site Access 1

Eastbound Approach Right-turn Lane

2025 AM and PM Peak Hours

LEGEND

- = AM Peak
- = PM Peak



TOWN OF CLAYTON
Engineering & Inspections Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

WASTEWATER ALLOCATION REQUEST

The Town of Clayton, in an effort to manage and maintain the sewer and water capacity for the Town, requires that this application be completed and submitted to the Town for consideration of a utility allocation. Review fee is due upon submittal of request.

Wastewater Allocation Request Review Fee: \$50

Application MUST be completed and sealed by a registered engineer unless otherwise approved by staff.

SITE INFORMATION

Name of Project: Clayton Village Center Acreage of Property: 12.39
County Tag Number: _____ NC PIN: 166800-74-6900
Address/Location: Hwy 70, Clayton, NC

Zoning District: CZ-MU
Town Limits / ETJ: ☒ Town Limits ☐ ETJ (Extra-Territorial Jurisdiction)

APPLICANT INFORMATION – Applicant must be a registered engineer unless otherwise approved by Town Engineer

Applicant: Bartlett Engineering & Surveying, PC
Mailing Address: 1906 Nash Street North
Phone Number: (252) 399 - 0704 Fax: _____
Contact Person: Steve Oliverio
Email Address: steve@bartletteng.com

PROPERTY OWNER INFORMATION

Name: Clayton Village Center, LLC & Clayton Corner, LLC
Mailing Address: 109 Elway Drive, Clayton, NC 27527
Phone Number: (919) 333-0701 Fax: _____
Email Address: kamalcat@gmail.com

FOR OFFICE USE ONLY

Date Received: _____ File Number: _____ Associated Project Number: _____

PROJECT INFORMATION

Use: ☒ New ☐ Expanded ☐ Change

Use Type: ☒ Residential ☒ Non-Residential

Proposed Use(s): CZ-MU Existing Use(s): Vacant/Single-Family Res.

Invoice shall be mailed to the following:

Developer Name: Clayton Village Center, LLC & Clayton Corner, LLC

Mailing Address: 109 Elway Drive, Clayton, NC 27527

Phone Number: (919) 333-0701

Fax Number:

Email Address: kamalcat@gmail.com

ALLOCATION REQUEST

The following is required:

- For non-residential construction, submit a floor plan of proposed building.
- Use additional sheets if necessary.
- Provide any documentation supporting/justifying the request as an attachment (using a comparable use is recommended).
- If a phasing / take-down schedule is proposed, include as an attachment.

Residential:

Gross Acreage: 12.39

Single Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units			
3 Bedroom Units			
>3 Bedroom Units			
Total		-----	

Multi-Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units	210	240	50,400
3 Bedroom Units	24	360	8,640
>3 Bedroom Units			
Total	234	-----	59,040

Non-Residential: (Design Flow Guideline provided as Appendix A)*

**If design flow deviates from the flow rates presented in Appendix A, provide supporting documentation/justification as an attachment in the form of 12 months of water bills demonstrating gallons per day utilized.*

Gross Acreage: 0.85

Use	Measurement Unit	# of Units	GPD per Unit	Total Requested GPD
Retail (w/ Food Service)	1,000 SF	5.1	130	663
Clubhouse (w/ no Food Service)	1,000 SF	3.5	100	350
Total			-----	1,013

TOTAL REQUESTED GALLONS PER DAY: 60,053

NOTE TO APPLICANT:

Invoicing:

Invoices are generated on the following schedule:

Non-Residential:

Generated with the application for a Zoning Compliance Permit.

Residential:

Multi-Family / Apartments:

Generated with the application for a Zoning Compliance Permit.

Subdivision / Subdivided Lots:

Generated at Final Plat submittal.

Fee Development:

Development Fees are calculated and invoiced based on the Town of Clayton adopted [Comprehensive List of Fees and Charges](#). Invoiced fees include acreage fees, capacity fees, nutrient offset fees, recreation fees, fees-in-lieu, and electric department lot deposit. Please speak with Town staff with questions.

Approval:

Requests over 10,000 GPD are approved by the Town Council, by resolution. All other requests are approved by the Town Manager.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town of Clayton to approve the subject Wastewater Allocation. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

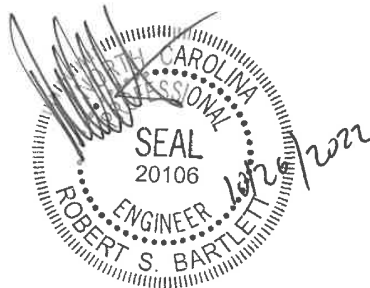
Steve Oliverio

Print Name


Signature of Applicant

10.26.22
Date

Engineer Seal:



TOWN OF CLAYTON OFFICE USE ONLY:

Approved by: ☐ Town Manager

☐ Town Council (*requests of 10,000 GPD or more require Council approval by resolution*)

The **Town Manager / Town Council (circle one)** has authorized the allocation of _____

gallons per day for project # _____.

Date of Approval: _____

Signed:

Town Manager

If approved by Town Council:

Attach a copy of the resolution and any associated documentation.

APPENDIX A: DESIGN FLOW RATES

The following table from the North Carolina Administrative Code 02T.0114 shall be used to determine the minimum allowable design daily flow of wastewater facilities. Alternatively, the Town in its sole and absolute discretion may calculate the customer's initial average daily wastewater flow based on data from the customer's operations (or from similarly situated customers) with a comparable sanitary sewer system, where such data are available and reasonably current.

Establishment Type	Daily Flow Rate
Barber and Beauty Shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, Offices and Factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, Rescue and Emergency Response	
Fire or rescue stations without on-site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and Drink Facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq. ft. floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq. ft. floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq. ft. floor space
Bakery	10 gal/100 sq. ft. floor space
Meat department, butcher shop or fish market	75 gal/100 sq. ft. floor space
Specialty food stand or kiosk	50 gal/100 sq. ft. floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self-service laundry facilities	500 gal/machine
Medical, Dental and Veterinary Facilities	
Medical or dental offices	250 gal/practitioner/shift
Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, Recreation, Camp Grounds, R-V Parks and other Outdoor Activity Facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite

Establishment Type	Daily Flow Rate
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, Pre-school and Day Care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service Stations and Car Wash Facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities	1200 gal/bay
Sports Centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq. ft.
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq. ft.
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, Shopping Centers, Malls and Flea Markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq. ft.
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq. ft.
Stores and shopping centers without food service	100 gal/1000 sq. ft.
Transportation Terminals	
Air, bus, train, ferry, port and dock	5 gal/passenger

Source: North Carolina Administrative Code 02T.0114, January 1, 2007



WATER & WASTEWATER ALLOCATION CRITERIA				
TOTAL POINTS = 75 MINIMUM 50 POINTS REQUIRED				
	Category	Points	Calc.	Notes
DEVELOPMENT TYPE ¹ (Choose 1 from this category)	Government/Public Admin./Public Safety	50		
	Non-residential (Commercial) - Retail & Restaurant	30		
	Non-residential (Commercial) - Office	20		
	Non-residential (Commercial) - Warehouse	15		
	Non-residential (Commercial) - Medical	25		
	Non-residential (Commercial) - Hotel/Motel	35		
	Industrial/Manufacturing	30		
	Institutional	15		
	Residential Existing Lot- Single Family Detached	40		Individual Existing Lot construction
	Residential Subdivision - Single Family Detached (> 0.25 Acre Lots)	20		Single Family Homes on Individual Lots greater than 0.25 acres
	Residential Subdivision - Single Family Detached (< 0.25 Acre Lots)	15		Single Family Homes on Individual Lots less than 0.25 Acres
	Residential Subd.- Single Family Attached (> 1,500 SF Heated Space)	10		Townhomes with heated square-footage greater than 1,500 SF
	Residential Subd.- Single Family Attached (< 1,500 SF Heated Space)	5		Townhomes with heated square-footage less than 1,500 SF
	Residential - Multifamily (Apartments)	10		
	Mixed-Residential	25		Mix of various lot sizes of Single-family, Townhomes, and Apartments
	Mixed-Use Commercial & Residential	30		Mix of Residential and Non-residential (Commercial) uses
	Downtown Redevelopment	30		
	Infill Development	25	25	Utilities already exist within 300 Feet of property
FUTURE TAX STATUS (Choose 1 from this category)	Exempt	0		
	Residential	5	5	
	Non-residential	10		
	Industrial	10		
COMMUNITY BENEFIT BONUS POINTS (Choose All that apply from this category)	Cultural Arts/Entertainment for Public	10		
	Sports/Recreation for Public	10		
	Town Electric Customer	20	20	
	Expansion of existing non-residential use	10		
	Re-development of an existing property	5		Must result in increased property value
	Residential Subdivision - Additional amenities included	5 - 15	10	Pool, Clubhouse, sports courts, etc. - 5 pts per, max 15 pts Pool and Clubhouse
	Job Creation - 10 to 25 new jobs	5	5	
	Job Creation - 26 to 100 new jobs	10		
	Job Creation - 100+ new jobs	15		
	Job creation - Jobs created will have salaries at or above median income	5		Must be greater than 50% of jobs added with documentation to confirm
	Residential - Multiple-Car Garages provided	5		
	Residential - Overflow Parking provided	5		Subject to Planning and Engineering support
	Masonry Elements included in Building Construction	10	10	Brick and Stone used in the Front Facade of the Building
	Sustainable/High Efficiency Products and appliances used	5 - 15		5 pts per, max 15 pts
	Private trail connection to Public Greenway	10		
COMMUNITY IMPACT DEDUCT POINTS (Choose All that apply from this category)	Pump Station Improvements required ²	-10		Subject to Town policy and standards
	New Pump Station Required ²	-20		Subject to Town policy and standards
	Out-of Town Status (After construction)	-10		
	Outside Fire District	-5		
	Inconsistent with Comp Plan	-5		
CLARIFICATIONS	1	Any Development Type Category not listed is subject to Town Council discretion with staff recommendation.		
	2	The Town Engineer may waive these deductions if the improvements are consistent with Future utility service plans, replace/offline an aging station, or are in the best interest of the Town.		



Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

December 8, 2022

Clayton Village Center, LLC & Clayton Corner, LLC
109 Elway Drive
Clayton, NC 27527
kamalcat@gmail.com

Re: 2022-158-CZM Clayton Village Center Conditional Zoning District and Master Plan

To Whom It May Concern,

The Town of Clayton Planning staff is recommending to the Planning Board and Town Council that conditions of approval be placed upon the above referenced application, which proceeds to the Planning Board on December 20, 2022 and Town Council on January 17, 2022. These recommended conditions of approval are outlined on the back of this letter.

Please read through these potential conditions of approval, and sign below if you are in agreement with the conditions as proposed. If you are not in agreement please respond accordingly in writing. This will be included within the agenda packet for Planning Board and Town Council review.

Thank you.

Sincerely,

Ben Howell, AICP, CZO
Planning Director

Recommend Conditions of Approval (2022-158-CZM, Clayton Village Center Conditional Zoning District and Master Plan):

1. Following Town Council approval, an electronic copy of the Master Plan and Narrative including the Conditions of Approval shall be submitted to the Planning Department for final approval.
2. The Development shall meet all adopted Town of Clayton Unified Development Code (UDC) requirements, Town of Clayton Engineering and Stormwater design standards, and the North Carolina Fire Code and NFPA Fire standards, except where specifically modified by the approved master plan.
3. The Development shall be constructed in substantial conformance with the Master Plan and Master Plan Narrative as approved by the Clayton Town Council.
4. The development shall be constructed in three phases, in accordance with the Master Plan.
5. Permitted uses shall be limited to the following:
 - Multifamily apartments
 - Commercial retail
 - Clubhouse/pool
 - Utility, Minor
6. The following standards will apply to the development:
 - Maximum number of Units: 234 dwelling units
 - Maximum Density: 21 DUA
 - Setbacks and Structure Height:
 - Front: 25 Feet
 - Side Interior: 15 Feet (Abutting Residential: 30 Feet)
 - Side Street: 30 Feet
 - Rear: 30 Feet
 - Maximum Building Height: 50 Feet (3 Stories)
 - Maximum Impervious Surface: 65%
7. A pool and clubhouse will be provided as amenities for the multifamily development.
8. All portions of the site shall obtain electricity from the Town of Clayton's electric utility, in accordance with the Wastewater Allocation Criteria sheet submitted by the applicant.
9. A minimum of 0.57 acres of the site is comprised of Resource Conservation Area and will be preserved as open space.
10. The following transportation improvements will be constructed and accepted by NCDOT (where necessary) prior to issuance of the first Certificate of Occupancy:

- US 70 Business/Site Access 1: Construction of a 100-foot eastbound right-turn lane with appropriate deceleration area and taper.
 - US 70 Business/Hardee Lane: Extend eastbound U-Turn lane with full-width storage to 300 feet with appropriate deceleration area and taper.
11. The Wildwood Drive frontage (west side) of the development will be improved to match the east side improvements being completed by the Buckhorn Branch project. At a minimum, Wildwood Drive will be improved to provide a full 11-foot-wide travel lane, curb-and-gutter and sidewalk along the frontage of the development.
 12. Any additional transportation improvements required as part of the NCDOT Driveway Permit will be constructed prior to issuance of the first Certificate of Occupancy.
 13. The following architectural standards shall be met:
 - Residential and Retail:
 - Two (2) or more material types shall be used. An aesthetic and modern color scheme will be used.
 - Stone/masonry accents to be provided on a minimum of 25% of all front building façades. Stone/masonry accents will be a minimum of a 2-foot skirt under the front elevation.
 - Residential:
 - All front building façades will be fiber cement siding.
 - Side and Rear elevations may be vinyl siding or fiber cement siding with colors to match front elevations.
 - Architectural-style shingles will be used
 - Retail: Decorative awnings will be used on the front façade.
 14. To the extent of any conflict between the Master Plan, Master Plan Narrative and these conditions, these conditions shall control.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby certify that I have reviewed the recommended conditions of approval and am in agreement with the conditions as they are outlined within this letter.

Abdul Kamalpasha

Print Name

AH Kamalpasha
AH Kamalpasha (Dec 10, 2022 10:51 EST)

Signature of Applicant

Dec 10, 2022

Date

Recommended Conditions Document_Clayton Village Center Conditional Zoning District_12-8-22

Final Audit Report

2022-12-10

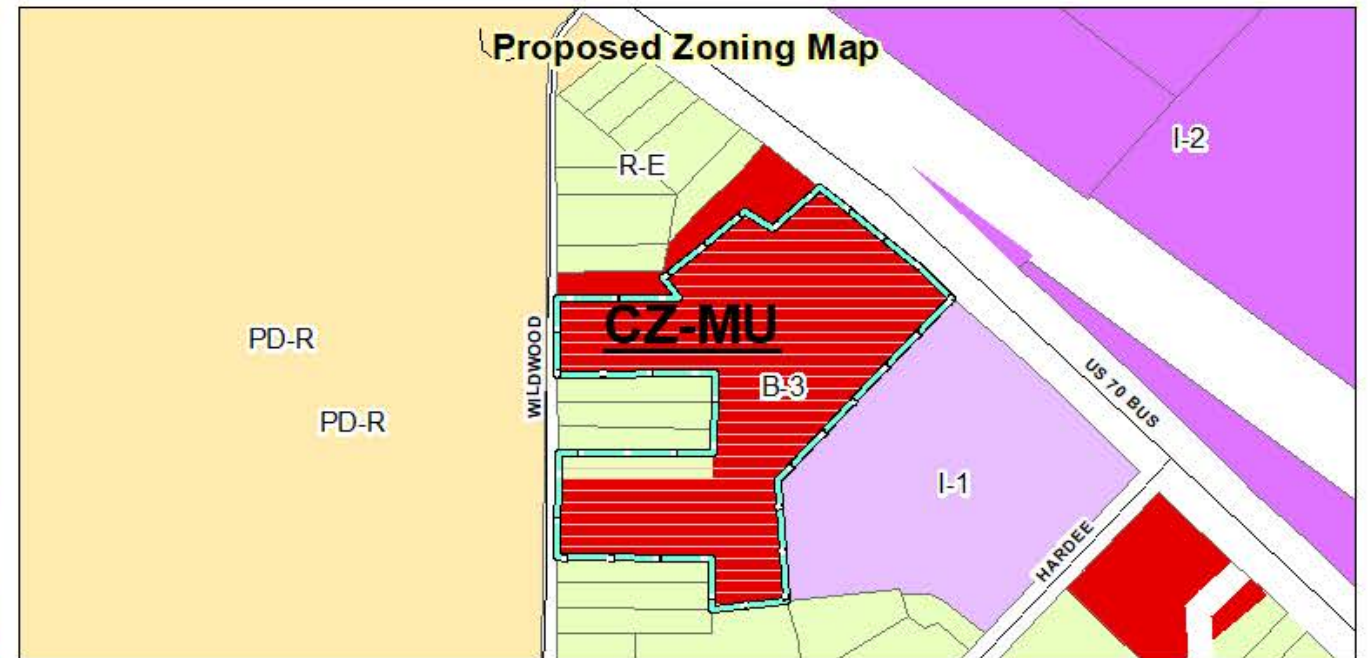
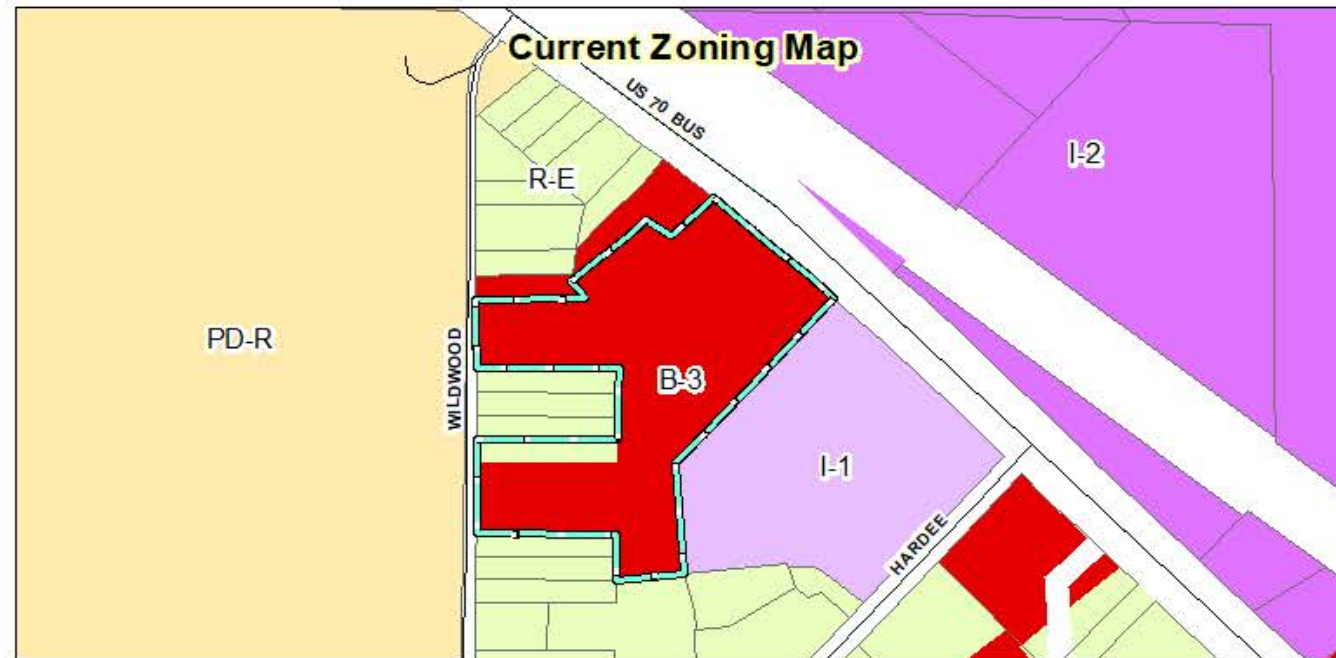
Created:	2022-12-08
By:	Benjamin Howell (bhowell@townofclaytonnc.org)
Status:	Signed
Transaction ID:	CBJCHBCAABAFb0kkS3AvdzVd5_sRnERfp6feJtS5ZR_

"Recommended Conditions Document_Clayton Village Center Conditional Zoning District_12-8-22" History

-  Document created by Benjamin Howell (bhowell@townofclaytonnc.org)
2022-12-08 - 5:25:54 PM GMT
-  Document emailed to kamalcat@gmail.com for signature
2022-12-08 - 5:26:41 PM GMT
-  Email viewed by kamalcat@gmail.com
2022-12-10 - 3:50:26 PM GMT
-  Signer kamalcat@gmail.com entered name at signing as AH Kamalpasha
2022-12-10 - 3:51:29 PM GMT
-  Document e-signed by AH Kamalpasha (kamalcat@gmail.com)
Signature Date: 2022-12-10 - 3:51:31 PM GMT - Time Source: server
-  Agreement completed.
2022-12-10 - 3:51:31 PM GMT



Adobe Acrobat Sign



Request: Rezoning from R-E & B-3 to CZ-MU
Project Name: Clayton Village Center
Project Number: 2022-158-CZM

Applicant: Bartlett Engineering and Surveying, PC
 Property Owner: Clayton Village Center, LLC & Clayton Corner, LLC
 Tag #: 05A01013



0 0.1 0.2 Miles



Staff Report Map
 Prepared by: TOC Planning Department
 December 8, 2022

Disclaimer: Town of Clayton assumes no legal responsibility for the quality of the data represented here.

Document Path: O:\PLANNING\CONDITIONAL ZONING w_ MA STER\2022\2022-158-CZM Clayton Village Center\Staff Report Map\Staff Report Maps - 2022-158-CZM .mxd